The EDISON ELECTRIC INSTITUTE BULLETIN

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MAR 2?

March 1953

GEOGRAPHY & INDUSTRY

Vepco Informs Employees
W. E. Wood

Safety Is Our Business
Ernest L. Godshalk

Hells Canyon Development
Robert F. Ball

System Planning for KCP&L
C. Myron Little and J. S. Palmer

Sales and Accounting Conference Programs

Published Monthly by Edison Electric Institute

ELECTRICAL RESEARCH STATISTICS
THE ELECTRIC LIGHT AND POWER INDUSTRY

Current Statistical Data Covering 100 Per Cent of Industry

November, 1951-1952

SOURCE AND DISPOSAL OF ENERGY—MONTH OF NOVEMBER

	1952	1951	%
GENERATION* (Net)			
By Fuel Burning Plants	27,225,451,000	24,028,445,000	+13.3
By Water Power Plants	6,521,748,000	8,074,906,000	−19.2
Total Generation	**33,747,199,000**	**32,103,351,000**	**+ 5.1**
ADD—Net Imports Over International Boundaries	77,916,000	149,453,000	−47.9
Less—Company Use	116,118,000	108,615,000	+ 6.9
Less—Energy Used by Producer	509,852,000	652,565,000	−21.9
Net Energy for Distribution	**33,199,145,000**	**31,491,624,000**	**+ 5.4**
Lost and Unaccounted for	3,834,676,000	4,010,715,000	− 4.4
Sales to Ultimate Customers	**29,364,469,000**	**27,480,909,000**	**+ 6.9**

CLASSIFICATION OF SALES

NUMBER OF CUSTOMERS—As of November 30			
Residential or Domestic	40,634,187	39,107,038	+ 3.9
Rural (Distinct Rural Rates)	1,663,073	1,658,301	+ 0.3
Commercial or Industrial:			
Small Light and Power	5,635,825	5,531,910	+ 1.9
Large Light and Power	258,028	248,244	+ 3.9
Other Customers	158,353	162,542	− 2.6
Total Ultimate Customers	**48,349,466**	**46,708,035**	**+ 3.5**
KILOWATTHOUR SALES—During Month of November			
Residential or Domestic	7,445,723,000	6,712,030,000	+10.9
Rural (Distinct Rural Rates)	604,787,000	577,323,000	+ 4.8
Commercial or Industrial:			
Small Light and Power	5,185,150,000	4,860,861,000	+ 6.7
Large Light and Power	14,611,043,000	13,778,828,000	+ 6.0
Street and Highway Lighting	341,243,000	324,688,000	+ 5.1
Other Public Authorities	709,324,000	713,246,000	− 0.6
Railways and Railroads:			
Street and Interurban Railways	249,928,000	285,177,000	−12.4
Electrified Steam Railroads	183,210,000	189,700,000	− 3.4
Interdepartmental	34,061,000	39,056,000	−12.8
Total to Ultimate Customers	**29,364,469,000**	**27,480,909,000**	**+ 6.9**
Revenue from Ultimate Customers	**$527,279,900**	**$488,494,500**	**+ 7.9**

RESIDENTIAL OR DOMESTIC SERVICE

AVERAGE CUSTOMER DATA—For 12 months ended November 30			
Kilowatthours per Customer	2,155	1,988	+ 8.4
Average Annual Bill	$59.69	$56.06	+ 6.5
Revenue per Kilowatthour	2.77¢	2.88¢	− 1.8

* By Courtesy of the Federal Power Commission.

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The objectives of the Edison Electric Institute are:

The advancement in the public service of the art of producing, transmitting, and distributing electricity and the promotion of scientific research in such field.

The ascertainment and making available to the members and the public of factual information, data, and statistics relating to the electric industry.

To aid its operating company members to generate and sell electric energy at the lowest possible price commensurate with safe and adequate service, giving due regard to the interests of consumer, investor, and employee.

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The EDISON ELECTRIC INSTITUTE BULLETIN

March, 1953

Vol. 21 No. 3

Articles, Speeches, Reports

An Evaluation of Vepco's Employee Information Program
W. E. Wood 67

Safety Is Our Business
Ernest L. Godshalk 69

Are Tax Dollars to Develop Hells Canyon?
Robert F. Ball 71

Atlantic City to Welcome Twenty-First EEI Convention 75

Stimulating and Varied Program Planned for EEI-AGA Accounting Conference 79

EEI Sales Conference Will Survey Sales Activities, Preview Selling Trends 81

The Planning Picture for Kansas City Power & Light Co.
C. Myron Little and *J. S. Palmer* 83

Accident Prevention Committee Meeting
W. F. Brown 89

Prime Movers Committee Meeting
G. V. Williamson 90

News, Notes, Miscellany

Conventions and Meetings 66

Columbia Utility Workshop Record Published 77

Seven Electric Companies Sponsor World's Largest Network Analyzer 78

PP&L Develops Unique Method of Feeding Emergency Crews in Isolated Areas 80

Central Hudson's Reddy Rhyme Collects Bills Not Paid on Time 88

Accident Frequency Reduction Award Approved by EEI Board of Directors 92

Speakers' Slide Kit for Rural Service Men 92

Annual Conference of Utility Fleet Operators 92

Centennial Promotion Scores Points for Pacific Gas and Electric 93

Personals 94

CONVENTIONS AND MEETINGS

1953

MARCH

2- 6 ASCE Convention, Hotel Fairmont, San Francisco, Calif.
3 PIP Mid-Atlantic Regional Meeting, Mayflower Hotel, Washington, D. C.
5 Vermont Electrical Association 50th Annual Mid-Winter Meeting, Woodstock Inn, Woodstock, Vt.
5- 6 Pacific Coast Electric Association Engineering and Operating Section Conference, Long Beach, Calif.
8-11 NCEA Electrical Industries Meet, Hotel Nicollet, Minneapolis, Minn.
10 Pacific Coast Electrical Association, Business Development Section, Civic Auditorium, Long Beach, Calif.
11 Pacific Coast Electrical Association, Business Development Section, Valley College Auditorium, San Bernardino, Calif.
11-14 American Planning and Civic Association Annual Meeting, St. Charles Hotel, New Orleans, La.
12 EEI Residential Lighting Committee, Van Cleve Hotel, Dayton, Ohio
12-13 PUAA Region 5 Meeting, Richmond, Va.
17 Pacific Coast Electrical Association, Business Development Section, Hotel Westward Ho, Phoenix, Ariz.
19 National Industrial Conference Board 39th Meeting, Netherlands Plaza Hotel, Cincinnati, Ohio
19 EEI Industrial Relations Committee, EEI Headquarters, New York, N. Y.
20 Pacific Coast Electrical Association, Business Development Section, Puppet Theatre, Balboa Park, San Diego, Calif.
23-24 NCEA Accounting Conference, Dyckman Hotel, Minneapolis, Minn.
23-24 IES Canadian Regional Conference, Chateau Laurier, Ottawa, Ont.
23-25—Southeastern Electric Exchange, 20th Annual Conference, Boca Raton Hotel, Boca Raton, Fla.
26-27 Oklahoma Utilities Association Convention, Tulsa Hotel, Tulsa, Okla.
27 Pacific Coast Electrical Association, Business Development Section, Mapes Hotel, Reno, Nev.
30 National Association of Electric Companies, 1953 Annual Meeting of Member Companies, Mayflower Hotel, Washington, D. C.
30-Apr. 2 EEI 19th Annual Sales Conference, Edgewater Beach Hotel, Chicago, Ill.

APRIL

2- 3 IES Pacific Northwest Regional Conference, Benson Hotel, Portland, Ore.
8- 9 Pacific Coast Electrical Association Administrative Services Section Conference, Phoenix, Ariz.
8-10 Northwest Electric Light and Power Association, Engineering and Operation Section, Multnomah Hotel, Portland, Ore.
8-10 Missouri Valley Electric Association Engineering Conference, President Hotel, Kansas City, Mo.
12-14 IES Southwestern Regional Meeting, Hotel Baker, Dallas, Texas.
12-15 AGA Purchasing and Stores Committee, Hotel Schroeder, Milwaukee, Wis.
13-16 EEI Transportation Committee, Jointly with AGA Motor Vehicle Committee, Hotel Sherman, Chicago, Ill.
16 EEI Industrial Relations Committee, in conjunction with Personnel Section of Ohio Electric Institute, Netherlands Plaza Hotel, Cincinnati, Ohio
16-17 Southeastern Electric Exchange Engineering and Operating Section Conference, Edgewater Gulf Hotel, Edgewater Park, Miss.
17 Maryland Utilities Association, Annual Meeting, Lord Baltimore Hotel, Baltimore, Md.
20 NCEA Production Engineering Meeting, Dyckman Hotel, Minneapolis, Minn.

1953

APRIL

20-22 National Conference of Electric and Gas Utility Accountants, Sherman Hotel, Chicago, Ill.
21 NCEA Accident Prevention Committee, Dyckman Hotel, Minneapolis, Minn.
21-23 Oklahoma Utilities Association, Southwestern Gas Measurement Short Course, University of Oklahoma, Norman, Okla.
22 NCEA Distribution and Equipment Engineering Meeting, Dyckman Hotel, Minneapolis, Minn.
23-24 PEA Meter Committee, Hagerstown, Md.
24-25 NCEA South Dakota All-Electrical Industry Meeting, Ward Hotel, Aberdeen, S. Dak.
26-28 Rocky Mountain Electrical League Annual Spring Conference, Shirley Savoy Hotel, Denver, Colo.
30-May 1 PEA Communications Committee, Hotel Roosevelt, Pittsburgh, Pa.

MAY

1- 2 Controllers Institute of America, Pacific Coast Conference, Hotel Ambassador, Los Angeles, Calif.
3- 6 EEI Purchasing and Stores Committee Annual Meeting, Hotel Statler, Detroit, Mich.
4- 5 EEI Accident Prevention Committee, Edgewater Beach Hotel, Chicago, Ill.
4- 6 Northwestern Electric Light and Power Association, Business Development Section, Davenport Hotel, Spokane, Wash.
5- 6 EEI Transmission and Distribution Committee, Edgewater Beach Hotel, Chicago, Ill.
5- 6 PIP West North Central Regional Meeting, Russell Lamson Hotel, Waterloo, Iowa
7- 8 PEA Industrial Sales Conference, Galen Hall, Wernersville, Pa.
7- 8 PUAA Annual Convention, Chase Hotel, St. Louis, Mo.
11-12 EEI Electrical Equipment Committee, Sir Walter Hotel, Raleigh, N. C.
12-13 PEA Electrical Equipment Committee, Edison Building of Philadelphia Electric Co., Philadelphia, Pa.
12-13 EEI Commercial Cooking Conference, Sheraton Hotel, Chicago, Ill.
13-15 Pacific Coast Electric Association Annual Convention, Hoberg's, Lake County, Calif.
14-15 IES East Central Regional Conference, Hotel Lord Baltimore, Baltimore, Md.
14-15 PEA Hydraulic Power Committee, York, Pa.
14-15 PEA Transmission and Distribution Committee, Skytop, Pa.
18-19 IES Southern Regional Conference, Sedgefield Inn, Greensboro, N. C.
20 EEI Industrial Power and Heating Section, Ft. Sumter Hotel, Charleston, S. C.
21-22 PEA Systems Operation Committee, Harrisburg, Pa.
21-22 EEI Industrial Power and Heating Section Joint Meeting with Southeastern Electric Exchange Industrial Power Sales Conference, Fort Sumter Hotel, Charleston, S. C.
25-26 IES Great Lakes Regional Conference, Syracuse Hotel, Syracuse, N. Y.
25-27 EEI Meter and Service Committee, Wentworth-by-the-Sea, Portsmouth, N. H.

JUNE

1 EEI Industrial Relations Committee, in conjunction with EEI Annual Convention, Atlantic City, N. J.
1- 4 EEI 21st ANNUAL CONVENTION, ATLANTIC CITY, N. J.
15-19 ASCE Convention, Hotel Casa Blanca, Miami Beach, Fla.
21-24 Michigan Electric Association Annual Meeting, Mackinac Island, Mich.
25-27 CEA Annual Convention, Manor Richelieu, Murray Bay, P. Q.

(Continued on page 96)

The EDISON ELECTRIC INSTITUTE
BULLETIN

An Evaluation of Vepco's Employee Information Program

W. E. Wood

Executive Vice President, Virginia Electric and Power Company

A brief description of the Virginia Electric and Power Company's (Vepco) experimental Employee Information Program, together with a summary of replies of employees to the first employee opinion survey questionnaire covering the first year of complete operation of this program, was published in the March, 1951, issue of the BULLETIN. This survey was conducted in the fall of 1950.

After the program had been in complete operation for approximately three years, a second such survey was made. In compliance with a suggestion from the BULLETIN, we are describing briefly our impressions of the significance of the replies to this second survey, as well as our present appraisal of the value of the program to Vepco.

In order for anyone to understand the significance of our views concerning the program's value, it is necessary to be familiar with the following facts about how the program is operated:

1. The program is operated through the Director of Employee Information under the direct and close supervision of the top company executives.
2. These top executives (a) gather and record from day to day the information to be discussed and communicated downward and (b) edit carefully all outlines covering company philosophy, policies, and practices before these outlines are submitted to employees.
3. The most important step in the program is the regular all-day monthly staff meetings, to which all of the above information and outlines are submitted for discussion and suggestions. These staff meetings are presided over and directed only by top executives.
4. Individual members of the staff then explain the information and material discussed in the staff meetings to all other management employees. This is done through regular supervisory group meetings.
5. These supervisory employees in turn explain this same material to non-supervisory employees through regular non-supervisory group meetings.
6. Attendance at staff and supervisory group meetings is on a compulsory basis.
7. Attendance of non-supervisory employees at their group meetings is entirely on a voluntary basis.

In other words, the program involves the holding of three classes of group meetings—first, regular monthly all-day staff meetings conducted by top executives; second, bi-monthly, two-hour, supervisory group meetings conducted by staff members; and third, bi-monthly two-hour non-supervisory group meetings conducted by supervisory employees below the staff level.

We do not believe that such a program can be very successful without the active leadership, interest, and enthusiastic participation of top executives.

In all staff, supervisory and non-supervisory meetings ample time is provided for the submission and discussion of suggestions and questions by any employee concerning any phase of our business in which he may be interested. Great effort is made to encourage this form of upward communication.

The monthly staff meetings have been in operation regularly for more than seven years; the supervisory group meetings for about five years; and the non-supervisory group meetings for more than three years.

Through the staff meetings, members of the staff have acquired a remarkable understanding of the philosophy and policies of the company, of its problems and affairs, of the operations and importance of its various departments and geographic sections, and of the importance of wholehearted interdepartmental and intersectional cooperation of the whole group in producing efficiency of operation and promoting good employee and public relations.

The educational and training value of these staff meetings has produced a wealth of personnel who are fitted for promotion to higher positions of responsibility as and when a need for them occurs. There is no longer any dearth of promotable employees at the staff level. Similarly, the operation of the supervisory group meetings is constantly furnishing a pool of employees who are fitted for promotion into staff positions.

Through these meetings the morale of the entire management group has

been noticeably improved. Interdepartmental and interregional misunderstanding and jealousies seem "to fold their tents like the Arabs and silently steal away." Among all management employees, organizational cooperative harmony and mutual respect are increasing day by day, thereby creating a more pleasant atmosphere for everybody. This reduction of unpleasant tensions and improvement in human relationships is naturally reflected in the attitudes and contentment of our non-supervisory employees.

We are now convinced that this general improvement in the knowledge of the entire management group concerning the philosophy, policies, objectives, affairs, and problems of the company, which is implemented by this increasing cooperative harmony and mutual respect, is by far the most important development which has resulted from our seven years of experimentation with the program.

We make no special effort to interest non-supervisory employees in this program. It is true that our objective is to develop the respect and wholesome cooperation of all employees, but we do not believe that this can be accomplished by forcing non-supervisory employees to participate in the program if they do not wish to do so. We do believe, however, that we should furnish them with an opportunity to learn about any company affairs or problems in which they might be interested, as well as the opportunity to ask questions and make suggestions. That is why we continue to hold the non-supervisory group meetings. We are using every available device to assure non-supervisory employees that attendance at these meetings is entirely voluntary for them.

Over 50 Per Cent Attendance

The fact that well over 50 per cent of all non-supervisory employees attend these meetings regularly demonstrates plainly to us how much they appreciate this opportunity to participate in the program.

We made a special effort in our recent survey to find out whether or not a majority of non-supervisory employees really wanted these non-supervisory group meetings continued. It is difficult to make them very interesting. Of necessity they have to be conducted largely by first-line supervisors who have never had an opportunity to learn the art of conference leadership and who by virtue of their positions are not clearly as competent to discuss intricate company affairs, problems, and policies as members of the staff would be. Much material has to be read to the groups, and many of the leaders find it difficult to read and explain complex matters about which they have not had the opportunity to thoroughly familiarize themselves. They are not too competent to discuss many of the questions asked or suggestions offered. Under these circumstances, it is a wonder that these two-hour meetings are not quite boring to employees.

In response to our request in the survey for their suggestions as to how these meetings might be improved and made more interesting, many employees pointed out the above weaknesses. But when we asked them whether or not they wanted us to continue holding these meetings, their response in favor of continuing them was overwhelming. They said in effect—whether or not we choose to attend regularly, whether or not we frequently find the meetings dull and uninteresting—please do not deprive us of the opportunity to attend when we wish to do so.

Top-Management Support

We have concluded from our experience that there is no easy, speedy way to build up the morale and understanding of an organization; that efforts to produce these results are not apt to be successful without the direction, sincere interest, and hard work of top management itself.

We do not undertake in the program to give our employees a course in economic education as such. However, in our discussions of our philosophy, policies, and problems in general, our descriptions of our struggle to protect ourselves against the encroachment of competitive public power, we discuss freely with our employees our economic views and reasons for them. We believe that in this way they absorb a fair understanding of economic principles.

There follows a tabulation of the questions and replies to our second non-supervisory employee opinion survey:

Detail of Actual Responses to Survey Questions

Question		Per Cent Of Total Response
1. Does top management really try to keep you informed about the company's affairs, policies, and problems?	( ) Always	38
	( ) Usually	52
	( ) At times	8
	( ) No	1
	No answer	2
2. How much have you learned about the company's affairs, policies and problems since the Employee Information Program was started?	( ) A great deal	87
	( ) Very little	9
	No answer	4
3. Are you familiar enough with company policies to discuss with your workers questions which they raise?	( ) All of them	3
	( ) Most of them	68
	( ) Some of them	27
	( ) None of them	1
	No answer	2
4. Which policies do you need to know more about?	Total comments question 4—211	
5. Do you feel free to suggest changes in those policies which affect your work?	( ) Yes	87
	( ) No	9
	No answer	4
6. Do you feel that you are really a part of management?	( ) No.	11
	( ) More than I used to be	46
	( ) Yes	42
	No answer	1
7. What can your bosses do to make you feel freer to pass on suggestions and information to them?	Total comments question 7—235	
8. How good are the opportunities for preparing yourself for promotion?	( ) Excellent	13
	( ) Good	41
	( ) Fair	35
	( ) Poor	8
	No answer	2

(*Continued on page* 95)

Safety Is Our Business

Ernest L. Godshalk

Vice President, Kansas City Power & Light Company

An address before the EEI Accident Prevention Committee, Kansas City, Mo., January 12, 1953

IN the early fall of last year, the president of our company suggested to the advertising director that he make plans to come up with "something entirely different" in the production of our annual report to stockholders for the year 1952. Realizing as he did that no such report can be counted good unless it receives immediate attention of the reader, the advertising director concluded that the place to start was with the cover of the report.

We are proud of the fact that one of America's great artists, Thomas Hart Benton, is a resident of Kansas City. He had never, to our knowledge, considered doing anything of a purely commercial nature until he was approached on a prospective basis regarding an original painting for our annual report cover. After a couple days of "thinking it over," Mr. Benton advised us that he would like to undertake the job.

At first, the artist had in mind rendering his conception of electric power production, transmission and distribution possibly in some kind of semi-abstract form. Then, as he was trying to work out his composition, he said, "Wait a minute! After all, the people that run your business are really more important than the machinery! Why don't I include a figure of a lineman in my drawing?" Well, those of you who may be familiar with Benton's unclad "Persephone" and "Susanna and the Elders," or with his powerful drawings of cowboys, farmers, and working people of all kinds, can imagine that we were happy to have him decide that our painting should include a human, even if fully-clothed, figure.

Mr. Benton wanted to know whether or not we could persuade one of our company linemen to pose for him. We said we thought that request presented no problem and we would see what we could do. Our advertising director then went to the personnel director and asked him to suggest the very best lineman we had for the modeling job. The personnel director spoke up quickly and said: "Why, the best lineman we have is a chap by the name of Wendell Benton." Naturally, the coincidence of artist and model having the same name, even though not related, pleased all of us—but none more than Artist Benton. So, while Model Benton will appear in the cover painting for the annual report, he will appear also on the inside front cover of the report in a photograph made in the Benton studio showing the two Bentons at work.

But that isn't all of the story. You will remember that our advertising director had requested the services of "the best lineman" available for the posing. Now it happens that Lineman Benton was awarded the Life Saving Medal and Certificate of the National Safety Council last July for reviving a fellow worker who had suffered a 2300-v electric shock while both were atop a pole in Kansas City.

People and Safety

My purpose in relating these matters has been to arrive at two general observations:

1. That *people*—employees and customers—really are the most important part of our business;

2. That the *best* employees are the safest employees.

Tom Hart Benton, versatile craftsman that he is, has produced some still-life paintings that hang in a number of the nation's great art galleries. But his paintings of the human form —his conception of people—hang in larger number in many more of the country's galleries. He loves people; he draws them wonderfully well; and in his painting for us he has done a magnificent job in depicting the importance of people in the operation of an electric company.

I suspect that few, if any, people in the field of accident prevention will be surprised to learn that our best workers are also those most safety-minded, those most likely to be equipped with a knowledge of safety practices they can put swiftly to work in an emergency to save a life. Such an employee is Wendell Benton, and many others, thankfully, who are like him.

It has been said time and again that the best way is the safe way . . . and the safe way, the best way. And, all things considered, a rather singular fact is that the safe way is the fastest way to get a job done. I need hardly call attention to the great number of man-hours lost when there is an accident, even of minor character, on a job, man-hours other than those which may be lost by an injured worker.

Energy for Life or Death

It is a great business in which we are engaged, this matter of supplying electrical energy. It should be a source of infinite pride to all of us that we perform an essential and fundamental service and that on our work is based all the other work and all the accomplishments of everyone else in our service areas.

An instrument to be of such great usefulness must be of great power. It is, therefore, necessarily attendant with risk and danger. No reckless, careless, or indifferent person anywhere in its course is worthy to be trusted with its handling.

The natural energy of coal is stored in our fuel piles, and when the need arises, it is conveyed into our plants, crushed under the pulverizers, blown into boiler furnaces to make the steam that turns the turbines that turn the generators converting the energy into electric current sent out over our transmission lines and over our distribution systems. This energy which man has drawn from nature's store may be so controlled as to guide the surgeon's hand to save human life, but if any slip-up is made by anyone along the way, it may be turned into an instrument of death itself.

Our electric wires, spread over public streets and highways, are charged with electric current of high potential, ranging from 154,000 v on down. Careless contact with them means instant death. It has been said that you can't teach people carefulness by talk, that the burnt child dreads the fire, that

you can learn caution only from experience. But the things we deal with are so powerful and so deadly that the man who comes in careless contact with them doesn't live to try again. The lessons he learns from personal experience do him no good in this mortal world. We must learn from the experience of others. We have to realize the danger without suffering the hurt.

We all have sense enough to know what the result of carelessness will be, and we ought to have intelligence and character sufficient to see to it that no one needlessly suffers from our operations — employees or members of the public.

Spirit of Safety

I have yet to become acquainted with the outstanding safety record of any electric company whose executives were not active and energetic in their support of the company's safety program. And I have known a great many companies with poor safety records that could be laid at the very feet of company executives.

Likewise, I have observed that the companies with successful safety records are those in which there is a spirit of safety throughout the organization, from top to bottom. It is the kind of spirit in which each employee assumes a personal responsibility for the safety program; the kind of spirit that leads the individual to avoid being careless or indifferent or reckless himself; the spirit that encourages and counsels fellow-workers who are at the principal points of danger; the spirit that leads every employee to think safety and act safety and talk safety and teach safety.

If we can create this spirit of safety in each of our companies, then, while each employee cannot stand in person at the switch, or at the control board, or by the machinery, or on the towers or poles, each can send in his place the spirit he has helped to create within the organization, to make the minds alert, to steady the nerves, and to guide the hands of the men he has placed in his stead and protect them safely from all harm, harm to others, harm to self, and harm to our companies.

Epictetus, that grand old Greek philosopher who taught reliance on the inner life and character, once said:

> The materials of action are variable but the use we make of them should be constant.

From year to year—by reason of the research and study of the EEI Accident Prevention Committee, of the National Safety Council, and other organizations interested in the promotion of safe practices—new "materials of action" are developed. They may be new safety tools, new methods of resuscitation, new techniques of training, and a host of other improvements. These are things we should expect to come about as more and more thought and energy are given to the subject of life saving through safe methods.

"But the use we make of them should be constant." That is to say that the time will never come when every worker will become safety conscious just on his own. We must take the new developments, the new techniques, couple them with the old tried-and-true techniques used heretofore and keep pounding away constantly. Let us take variable materials of action as they arise but keep busy in their use *all the time.*

No Sudden Creation

Now our Greek friend Epictetus said still another thing:

> No great thing is created suddenly, any more than a bunch of grapes or a fig.

I wonder how many times the industry's safety directors have been discouraged at the progress of their safety programs? How many times have there been that series of accidents which has seemed to bring an entire program right down on their heads? Of course, like all good men, they get up, shake their heads a few times, and then start digging in to see what really happened.

Because safety work deals with human beings, it will never be easy, nor results certain. But "no great thing is created suddenly" and few important things achieve Jack-in-the-box fruition. Neither should perfection be expected overnight in safety programs. Safety, however, is certainly one aspect of the electric industry where perfection is the absolute goal. We engineers talk about a 100 per cent load factor on our systems as being the ideal, and yet we know full well that we will never attain it. We talk about 100 per cent efficiency on, say, a boiler and, again, we know we will never get it. But with safety, nothing less than 100 per cent effectiveness can ever be an objective, and this goal *is* attainable.

I said earlier that what we need is a thing called safety spirit. But where do we start to generate this spirit of safety?

An incident in *Through the Looking Glass* may provide the answer. It is the predicament of the White Rabbit at the trial of the tart-stealing Knave before the Queen of Hearts. The Rabbit has picked up some unsigned verses which, being without meaning, can be read either backward or forward. On being ordered to read the verses, he says: "Where shall I begin, please, Your Majesty?" And Her Majesty replies: "Begin at the beginning, and go on till you come to the end, then stop."

Executive Support

I submit that the place to start building a safety program is at the beginning. That is to say that it must have executive support—not faint support, not nodding support, not puny support but enthusiastic support, active support, energetic support, wholehearted support. Then, being assured of executive support, a safety program that will enlist the interest of every employee in every department of a company must be planned. Ways and means to acquaint each employee with the safety work among craft employees—linemen, underground men, plant operators, and others—must be found. But beyond this, as an example, why not have one phase of a safety program that appeals to clerical workers as well. One of the best ways I know of achieving the interest of such people in safety is promotion of Red Cross first-aid classes among them, not on a spasmodic basis but as a more or less continuing activity. There are many other ways, such as seeing that clerical workers have an opportunity to view various safety films of general interest, that safety posters on subjects tailored to their particular job classifications are displayed, and that a constant awareness of company safety activities is stimulated by the employee publication.

Yes, safety is very much our business. A better understanding of its workings among all of our employees will mean dollars-and-cents savings to our companies, but, much more than that, it will save life and limb and suffering among these employees and among our customers.

Are Tax Dollars to Develop Hells Canyon?

Robert F. Ball

Assistant to the President, Idaho Power Company

THE Snake River is the scene of an issue to determine whether the control of its water shall continue to be a function of the people of Snake River Valley or shall be pre-empted by agencies of the Federal government.

Hells Canyon is the issue. It is located 104 miles downstream from Weiser, Idaho. At that site the Bureau of Reclamation proposes to construct a high dam with a reservoir backing water 93 miles upstream. The purpose of the Hells Canyon project is power production. No reclamation or irrigation is included.

Construction of the Hells Canyon Dam by the Federal government is totally unnecessary because private enterprise is ready, willing, and financially able to develop the total hydroelectric resources of that section of Snake River.

Widespread Opposition to Proposal

The Hells Canyon issue has been widely and fully debated in the Snake River Valley area and the result is widespread opposition to the government proposal. Seldom have the issues involving a government project been so clearly defined.

The primary issue is whether the U. S. Interior Department shall assert primary jurisdiction over the waters of the Snake River, thereby jeopardizing existing water rights now valid under state laws. The Federal government has attempted to establish such a precedent in the Santa Margarita case in California.

Idaho irrigators are concerned with the fact that in a short water year, in the event Hells Canyon is built, the Interior Department might rule that Snake River waters are more essential for at-site power production at Hells Canyon than for upstream irrigation. Both major Idaho farm organizations, the Idaho State Grange and the Idaho Farm Bureau Federation, together with the entire Idaho Congressional delegation, the Governor, the leading water-right attorneys, the major water-users' organizations representing more than 2,000,000 acres of irrigated land, the Idaho Reclamation Assn., and over one hundred other organizations have taken a strong position against Hells Canyon, recognizing that it is a direct threat to the lifeblood of agriculture-irrigation water.

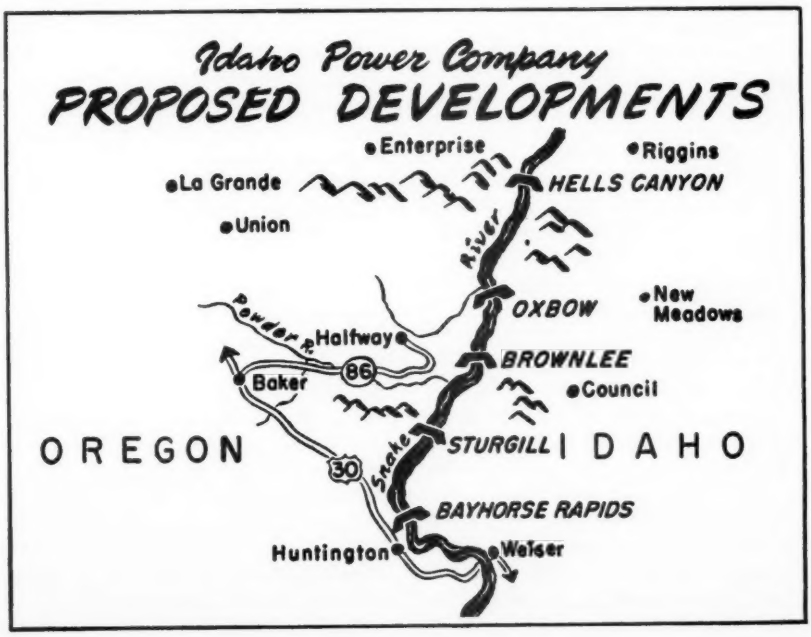
The companion issue is whether the Federal government should seek to invest huge sums of taxpayers' monies to develop a project when private, taxpaying venture capital is prepared and ready to do the job at no cost to the taxpayers.

When Idaho Power Co. commenced operations 36 years ago, it assumed full responsibility for supplying the power needs of the territory that it serves. This responsibility has been completely fulfilled. Not only has there never been a power shortage in the company's service area, but no industry or other customer has ever been denied all the power it required for its existing operations and future growth. Throughout World War II Idaho Power Co. exported substantial quantities of power for use in supplying shortages elsewhere in the Northwest, and immediately following the war began the largest expansion program in the company's history. In the period since 1945, the company has invested approximately $100,000,000 in additional operating facilities, including six new power plants. These plants have increased the company's power producing capacity from 106,000 kw at the end of 1946 to the 375,000 kw at the present time, or 3½ times what it was five years ago.

Future Capacity Requirements

The territory served by the company, southern Idaho and eastern Oregon, is growing rapidly in both agricultural and industrial development. We estimate that within the next ten years between 400,000 and 500,000 additional kilowatts of new capacity will be required by the company to supply our service area, with at least half of this required within the next five years. This will necessitate the construction of at least two new power plants within the coming five-year period, depending upon the capacity of the sites that are availabl for development. Present indications are that the construction of the first of these plants will have to be commenced early next year.

For approximately five years, since



Reprinted from January, 1953, issue of *Electrical West*.

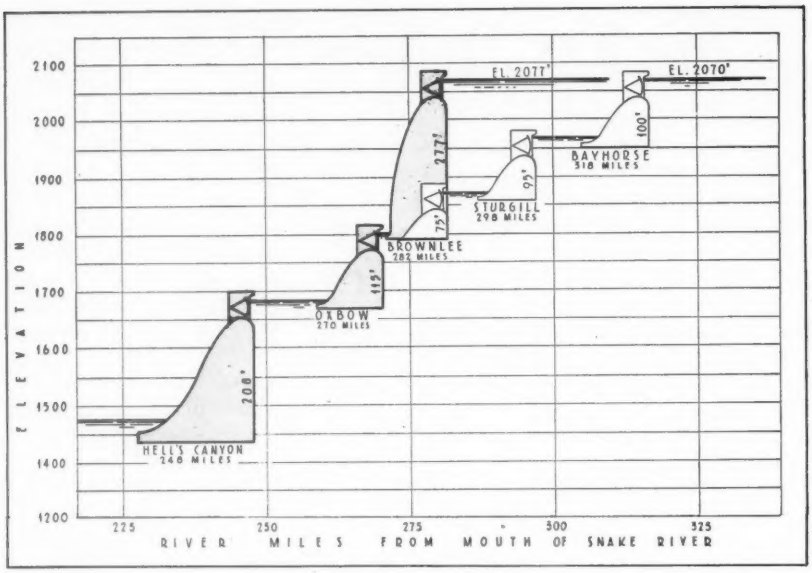
1947, Idaho Power Co. has had applications pending with the Federal Power Commission for the construction of the Oxbow project, with 151,000 kw of installed capacity, with a commitment to develop fully as needed the entire 104-mile stretch of the river between Weiser and Hells Canyon.

For the development of that stretch of the river, the company has proposed two alternative programs. One plan proposes a series of five low-head run-of-stream developments at sites identified as Bayhorse, Sturgill, Brownlee, Oxbow, and Hells Canyon, with an aggregate installed capacity of 714,000 kw. The other plan proposes to provide approximately 1,000,000 a-ft of usable storage by developing the power head embraced in the first three upstream locations at a single site by the installation of a storage reservoir at Brownlee.

This installation, along with the low-head developments at Oxbow and Hells Canyon, would provide an aggregate installed capacity of approximately 783,000 kw. These two plans provide a flexible approach to the development of the resources of this particular part of the river and, if the Federal Power Commission ultimately decides that some upstream storage is desirable, the three-dam alternative plan supplies all of the storage space that can be economically justified under the conditions of stream flow that will exist when the presently anticipated upstream diversion of water for irrigation is reached.

The Oxbow site is one of the low-head sites planned for development that the government Hells Canyon Dam and reservoir would destroy. The other sites that would be flooded out by a high dam at Hells Canyon are three above Oxbow, known as Brownlee, Sturgill, and Bayhorse, and low-head Hells Canyon site below Oxbow would also be destroyed. These sites would provide ideal run-of-stream plants, with between 700,000 kw and 800,000 kw of potential generating capacity.

The entire three-dam development can be constructed by Idaho Power Co. at an average cost, even at present-day prices, of $169.75 per kilowatt. The Oxbow site can be developed at an estimated cost of $156 per kilowatt, which makes this 151,000-kw site one of the best and cheapest remaining power sites in the Northwest if not in the entire nation.



Alternate Plans for Development of Hells Canyon Section of Snake River

The cost of $156 per kilowatt for Oxbow, and an average cost of only $169.75 per kilowatt for the entire development, compares with the Bureau of Reclamation proposal to spend $446 per kilowatt of installed capacity for a high dam at Hells Canyon.

Idaho Power Co.'s proposal to construct a series of low-head dams on Snake River is a continuation of the company's postwar expansion program. It is needed to assure the company's service area of an ample power supply in the years ahead. At the end of 1951, we were servicing approximately 115,000 customers, more than 71,000 of which were residential users, and over 27,000 were farm customers. We have more than 2,300 irrigation pumping customers. The use of electric power for irrigation pumping in our area has increased approximately 500 per cent in the last six years.

The low-head sites in jeopardy because of Hells Canyon are especially important because they constitute 74 per cent of the remaining power potential on the entire course of the upper Snake River, as it flows across southern Idaho and along the Idaho-Oregon boundary within our service area. Moreover, this is all the low-cost hydroelectric power left for the development of the southern Idaho-eastern Oregon territory, and upon which the area depends for its future growth and expansion.

Idaho Power Co. is ready, willing, and financially able to develop these sites, and is fully qualified to do so as the practical result of 36 years of experience in constructing and operating hydroelectric plants on the Snake River. Private development of these projects, with related transmission lines, would mean a total taxpaying investment of approximately $160,000,000 for generating and transmission facilities, which would be supplied entirely by investor capital, without the requirement of any expenditure of government funds. Any other program will not only add inevitably to the already huge and still increasing tax burden of the nation, as well as to the public debt—but will also prevent the investment of private capital for the creation of substantial taxpaying properties and enterprise.

The estimated cost of $446 per kilowatt of installed capacity for Hells Canyon is based on the Bureau of Reclamation's estimated project cost of $356,810,000. This, however, does not include $120,000,000 additional for transmission facilities, $1,000,000 for recreation facilities and approximately $5,000,000 for migratory fish preservation facilities, making a minimum total expenditure of $482,810,000, assuming, of course, that the department's estimates of cost can be relied upon.

Experience has demonstrated to the Congress that such departmental estimates, made for the purpose of obtaining project authorization and

appropriations, are notoriously inaccurate. For example, the Anderson Ranch Dam project on the Boise River, for which authorization was obtained on a cost estimate of only $13,040,000, has actually cost $30,000,000 to date and all the expenditures are not yet in.

If past experience is any criterion the government Hells Canyon project can easily cost well over a billion dollars. On 31 bureau projects completed since World War II actual costs have been 312 per cent of the estimates upon which Congress authorized them.

Conflicting Estimate of Output

So many estimates of Hells Canyon power and energy production figures have been made that it is impossible to keep up with them. The conflicting figures and resulting confusion that exist may be illustrated by the fact that, reduced to equivalent figures for purpose of comparison, the nominal prime power output at the Hells Canyon site, based on the Army 308 Report (page 0-233) may be estimated at 502,000 kw; in House Document 473 (page 170) it is 592,000 kw; and the Secretary of the Interior's "modifying" report of May 11, 1951, increases this figure to 688,000 kw.

Adding claimed benefits at existing and authorized plants on the Columbia above Snake River, together with existing and authorized dams downstream from Hells Canyon, to the claimed at-site power output, equivalent figures would be: 701,000 kw, based on the 308 Report; 932,000 kw, based on House Document 473; and 1,430,500 kw, which is the figure claimed by the Secretary of the Interior in his report of May 11, 1951.

In recent publicity appearing in Idaho, this latter figure is hedged somewhat with a claim of only 1,124,000 kw of prime power capability, apparently based on the assumption of "all projects currently authorized considered as being in operation," which, of course, is not the case and will not be for years to come.

It is an elementary engineering fact that a given amount of water falling a fixed number of feet can produce only a given amount of power. It makes no difference whether this is accomplished through one high-dam power plant, utilizing the full head or drop, or through the proposed low-head power plants, utilizing the same aggregate head or drop. There is, however, a marked difference, not only in the lower construction cost of the low dams versus the high dam, but also in the energy output obtainable from the two types of development.

The advantage in Idaho Power's proposed low-head developments arises from the fact that the pond water level—that is, the operating head—of the proposed plants will be maintained at a more constant level; whereas, in the proposed high dam at Hells Canyon, the operating head will be varied over a wide range as the reservoir water level is lowered to satisfy alleged multipurpose claims. It is contemplated that at times the reservoir level behind the proposed high dam will be drawn down as much as 289 ft.

During a period of critical water years, such as 1929-32, and under present irrigation water diversion conditions, the average generation at Hells Canyon would be only 473,000 kw. On the other hand, the average kilowatts that could be generated by the low-head run-of-river dams proposed by Idaho Power Co., which do not require storage each year to fill the reservoirs, would be 522,000 kw. This is a 10.36 per cent higher average capacity from the low-head dams proposed by the company than from the single Federal high dam at Hells Canyon.

High Cost of Downstream Benefits

For all practical purposes, during a critical water period such as existed in 1929-32, the combined at-site and downstream average generation attributable to the Hells Canyon high dam would result ultimately in the production of only 125,000 to 150,000 average kilowatts more than the low-head dams planned by Idaho Power Co. The additional cost of the high dam over the low dams would be at least $225,000,000, excluding necessary transmission lines. This would result in a cost per kilowatt for the additional power obtained of from $1,500 to $1,800 per kilowatt, excluding transmission, which cannot possibly be justified.

The same power can be obtained from other sources for only a small fraction of such cost. As a matter of fact, this relatively small downstream net power gain is the only power advantage that the proposed Hells Canyon high dam will provide, since Idaho Power Co.'s low-head dams will develop the entire balance of kilowatts available in the river. The actual government proposal is, therefore, to spend $482,000,000 of taxpayers' money—or more than $3,000 per kilowatt—to obtain between 125,000 and 150,000 kw of power above that which private enterprise is ready to provide, without the expenditure of a single dollar of government funds.

A high government dam at Hells Canyon would be a wasteful and unnecessary expenditure of taxpayers' money. Nevertheless, Hells Canyon has been singled out by government planners, specifically by the Bureau of Reclamation and by the Bonneville Power Administration, as the one they would most like to build. Their enthusiasm is spurred by the fact that it would be the highest dam in the world—a great monument at taxpayers' expense to the bureaucratic planners.

Idaho's Share of Power Produced

Even if Idaho were willing to be forced into a public power program as a requisite of obtaining a share of any of Hells Canyon power production, according to the project legislation Idaho would nevertheless receive only a minor share of the power produced. The Hells Canyon bill provides that Idaho can qualify for up to 300,000 kw, provided that the state sets up an agency to handle that power in accordance to the dictates of the Interior Department, and provides a time limit for compliance. The balance of Hells Canyon production distribution is left to the whims and dictates of Federal agencies.

Hells Canyon is being advocated as a multipurpose project despite the fact that the official project report of the Bureau of Reclamation shows that virtually 95 per cent of its cost will be allocated to power. Despite the fact that the Bureau of Reclamation is its sponsor, the Hells Canyon project has absolutely no irrigation features related to it. Furthermore, the flood control benefits claimed by the government planners disregard the fact that the upper Snake River is already controlled by an extensive series of reservoirs.

Much has been made of the claim that a high dam at Hells Canyon would have contributed greatly to a reduction in the 1948 flood at Portland. The facts are, however, that at

the time of the 1948 flood the flow of the Snake River at Oxbow was approximately 50,000 cfs. At the same time, the flow of the Salmon River was 103,000 cfs and that of the Clearwater 177,000 cfs. Clearly, the upper Snake River was not responsible for the flood at Portland, and if Federal funds are available for flood control purposes it is logical that these funds should be invested on the rivers where the flood waters originate.

Claimed navigation and recreation benefits ignore the fact that in order to operate the Hells Canyon project for power production purposes the maximum drawback at the dam would be 289 ft, causing the reservoir backwater to recede 58 miles. The multiple-purpose theory advanced for Hells Canyon by its planners proposes that it is possible to have the reservoir full for power production, empty for flood control, full for recreation and varying for purposes of navigation, all at the same time.

No Low-Cost Power

There is no low-cost power connected with the Hells Canyon project. According to House Document 473, the official engineering report, sale of firm energy is planned at 4.4 mills per kwh. Financial analysis of the bureau's report shows that the 4.4 mill rate is necessary if, by the report figures, the project is to pay out. This rate, of course, has no tax elements connected with it, as Federal projects are tax exempt.

Idaho Power Co. is actually supplying power at the present time to the large electric furnace installations at Pocatello at a lower rate than 4.4 mills, and at the same time is paying 31.7 per cent of its total revenue in Federal and state taxes.

In the year 1951 the total taxes paid by Idaho Power Co. exceeded $5,307,000. Taxes were by far the company's largest single item of expense. They exceeded total operating wages and salaries by more than $2,900,000. They exceeded total dividends paid to stockholders by more than $3,000,000. Last year the Federal government, without having invested a dime in the company's business, took more out of the business than the stockholders of the company, who have some $47,000,000 invested in the enterprise.

If Idaho Power Co. is permitted to go ahead with its proposed low-head development program in the stretch of the Snake River that would be flooded out by the Hells Canyon reservoir, the taxes on the power plants and related transmission facilities will amount to nearly $11,000,000 every year, which would be of real benefit to the national, state, and local governmental taxing units.

It is our sincere conviction that the taxes paid by Idaho Power Co. and other electric utilities represent, in these times, an essential contribution to government; and that where private taxpaying capital is ready and willing to do a job, it should not only be permitted, but urged, to do so, leaving the expenditure of Federal funds for national defense and for essential government services where the use of taxpayers' money is necessary.

Legislation was introduced in both houses of the 82nd Congress seeking the authorization of the Hells Canyon project. The Reclamation and Irrigation Subcommittee of the House Interior and Insular Affairs Committee held hearings on HR 5743, the Hells Canyon bill introduced in the House.

The full testimony in behalf of Hells Canyon was presented by the Department of the Interior, Bureau of Reclamation, and other proponents of the Federal project. Testimony in opposition was heard from grass-roots witnesses representing the Idaho State Grange, Idaho Farm Bureau Federation, Idaho Reclamation Assn., Idaho State Chamber of Commerce, water-users' organizations, water-right attorneys, the Governor of Idaho, Idaho's Congressional delegation, and many farm and business organizations. The ground swell of opposition to Hells Canyon proved a most forceful refutation of the Interior Department's claims that Idaho Power Co. is the sole opponent of their Hells Canyon scheme.

The subcommittee voted unanimously, nine Democrats and seven Republicans in attendance, to postpone indefinitely further consideration of the Hells Canyon bill, thus emphatically shelving HR 5743 for that session of Congress. The action was taken without hearing testimony in opposition from representatives of Idaho Power. Without hearing of our objections to Hells Canyon (and they are many) the Congressional group evidently decided it had heard more than enough reasons to turn down the department's pet scheme.

The public power advocates have perseverance. Mike Straus visited Boise recently and issued a statement that Hells Canyon legislation will be introduced in the next session of Congress. He took occasion to chide the people of Idaho for their shortsightedness in failing to recognize the philanthropic instincts of the Federal fathers in Washington. So Hells Canyon continues to be an issue, and continuing opposition from the people is essential if the Interior Department is to be thwarted in carrying out its unnecessary and expensive scheme.

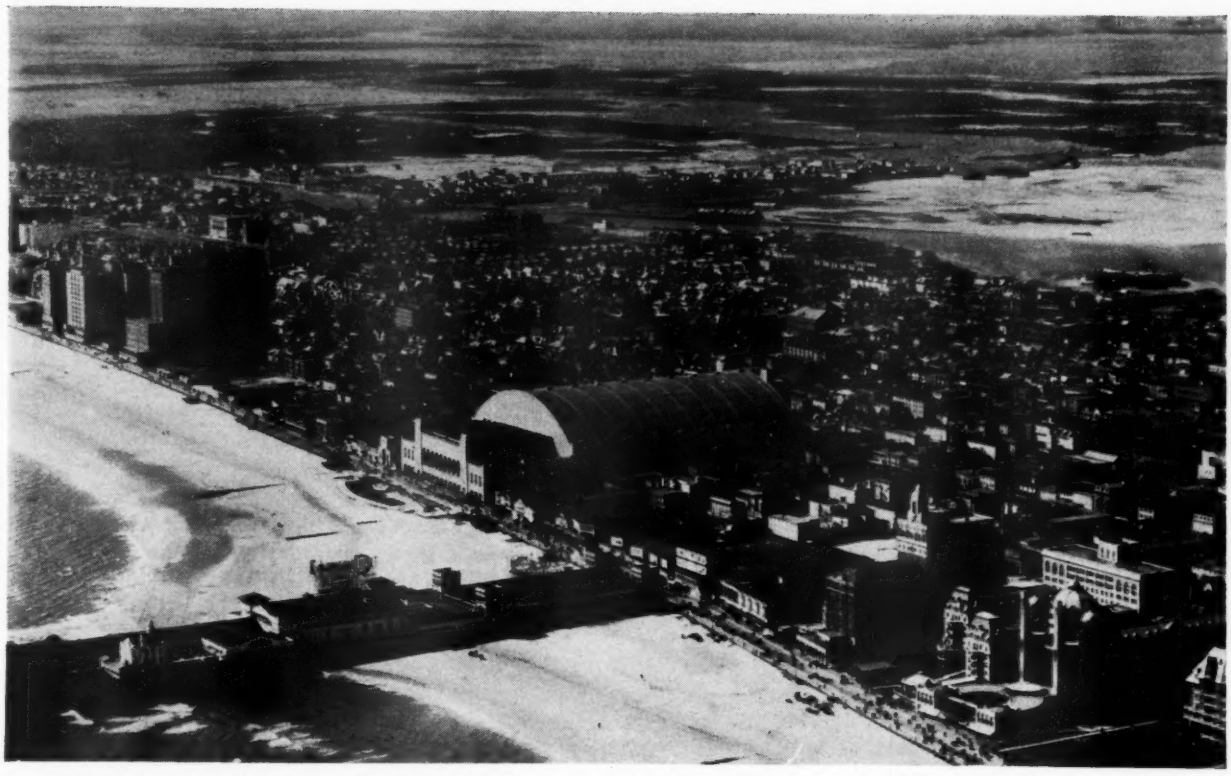
Willis E. Hughes

WILLIS E. HUGHES, Manager of the Employee Relations Department, Rochester Gas and Electric Corp., died recently at his home in Rochester, N. Y. He was 57 years of age.

A native of Utica, Mr. Hughes was graduated from Cornell University and was a graduate engineering student at Columbia and New York Universities while working for the Utilities Mutual Insurance Co. in New York City. His first connection with RG&E was as a safety engineer, in which position he is credited with having developed many of the safety measures and practices now standard in the corporation.

During World War II, Mr. Hughes was in charge of organizing RG&E's defense and protection system. After his promotion to manager of the Employee Relations Department in 1947, he headed the company's Divisions of Employment, Safety, Claims, Pensions, Suggestions, Employee Education, and the company magazine, the *RG&E News*.

He was a member of the Institute's Industrial Relations Committee, the Personnel Committee of the American Gas Association, the Rochester Chamber of Commerce, the Rochester Club, the Cornell Club, the Macedon Game Preserve, the Philip Garbutt Rod and Gun Club, and was a past president of the Rochester Safety Council.



An aerial view of Atlantic City on Absecon Island. At center foreground is the $15,000,000 Convention Hall, which has helped make Atlantic City world famous not only as a resort but also as a center for industrial exhibits and gatherings.

Atlantic City to Welcome Twenty-First EEI Convention

AFTER meeting in inland cities for the past two years, the Annual EEI Convention will again be held in Atlantic City. This year's meeting, the Institute's twenty-first, will take place on June 1-4 in surroundings which will be familiar to many EEI Convention-goers as the setting for previous electric industry gatherings.

In the 98 years since its establishment as a health resort, Atlantic City has become world famous for its convention and recreational facilities, for its fine hotels, wide sandy beach, mammoth Convention Hall, and for its boardwalk.

Ulysses S. Grant was President of the United States when the necessity for a boardwalk in Atlantic City first became apparent. The owner of a small hotel complained to the city council that tides swept over the marshland in front of his establishment, inconveniencing his guests. As a result, $5000 was appropriated for the construction of a "tide-proof sidewalk," which was formally opened on June 26, 1870.

The boardwalk was a mile long and constructed in collapsible sections, and when Atlantic City, then only a seashore village, closed for the winter, the walk was dismantled and stored.

However, the resort quickly grew in popularity, and a second walk was built in 1879. This and two others were destroyed by severe storms, and the present walk, nearly eight miles long, was badly damaged in the hurricane of 1944. Today a crew of specially trained carpenters works year-round to keep the boardwalk in good repair, with annual maintenance costs running as high as $100,000.

Indians of the Lenni Lenape Tribe of Southern New Jersey were doubtless the first vacationists to visit Absecon Island, on which Atlantic City is located. In the late 1600's and early 1700's the Indians would migrate from inland areas to the shore, canoeing from there to the island. The name "Absecon" is, in fact, derived from the Indian "Absegami" meaning "Little Water," which probably referred to the bay northwest of the present resort.

Absecon Island's pioneer settler was a Pennsylvania Quaker, who established a trading post there shortly after 1800. Farmer as well as trader, he raised cattle and corn which he sold to masters of sailing vessels who landed at the island for water and supplies.

The island, however, was not envisioned as a health resort until 1852 when Dr. Jonathan Pitney, a physician with a thriving practice on the

Atlantic City's great beachfront hotels, with their ocean vistas, form an imposing skyline. The beach itself is 200 to 300 yards deep, slopes gradually far out to sea, and in summer is washed by a gentle surf with temperatures in the 70's.

mainland, became aware of the physical advantages of Absecon Beach as a spa for city people. Dr. Pitney enlisted the support of Samuel Richards, a glass manufacturer, in the development of Absecon Island, and Richards immediately foresaw the need for a railroad.

Other manufacturers were soon convinced of the economic advantages of a rail line, and a company was formed to build one from the Delaware River to Absecon Beach. The construction of the road signalled the island's first real estate boom, which resulted in the organization of the Camden and Atlantic Land Co.

Atlantic City's world famous boardwalk (above and below). The first boardwalk, a mile long and built in 1870, was collapsible and was stored during winter months.

City Named

At one of the initial meetings of the company, a map of the proposed island development was shown to the board of directors. On the map a company engineer had lettered the name "Atlantic City" as the place where the railroad would terminate, and this designation was adopted as the name of the resort.

The railroad, which was completed in 1854, ran down Atlantic Ave., discharging passengers at the various hotels erected along its tracks. However, with construction of the first permanent boardwalk, the forerunners of the huge hotels which give present-day Atlantic City its distinctive skyline began to spring up along the beachfront.

Almost as characteristic of Atlantic City as the boardwalk are the

rolling chairs which enable visitors to perambulate effortlessly up and down the beachfront. These wicker conveyances are either motor driven at a slow speed or, as in the 1880's when they were originated, pushed by attendants.

Another method of transportation typical of Atlantic City is the jitney bus, so-called because the fare used to be a "jit," slang for a nickel. The original jitneys, large private motor cars equipped with extra seats, have now been replaced by small modern buses. Trolley cars travel the length of Absecon Island, and twin coaches take visitors from Atlantic City, through mainland communities, to the boardwalk in Ocean City.

Attractions

Eight miles long, the beach at Atlantic City is 200 to 300 yards deep and slopes gradually far out into the sea. In summer it is washed by an easy surf which provides water temperatures ranging in the seventies.

The Island of Absecon is composed of four separate municipalities, Atlantic City and the residential communities of Ventnor, Margate, and Longport. The boating center of the island, for both commercial and pleasure craft, is the inlet. Here, too, is found abandoned Absecon Light, which saved many vessels from surrounding shoals in years past. Erected in 1857, it was once at the water's edge, but through the action of time and tide, it is now two blocks away from the ocean.

The world's largest auditorium and convention hall, built at a cost of $15,000,000 and covering seven acres, is located in Atlantic City. It has housed practically every type of sporting event, as well as convention meetings attended by more than 40,000 people. In the main hall, the world's only full-sized indoor football field can be laid, and ice can be frozen on the floor for hockey or skating.

Atlantic City offers over 27,000 hotel rooms and 400 restaurants. Attractive shops line the boardwalk, and varied types of recreational fare are available. However, of greater importance are the city's ocean vista and temperate summer climate, which should provide a suitable background for creative discussion at the Institute's coming meeting.

Columbia Utility Workshop Record Published

FOR two weeks during August, 1952, a group of 25 utility executives—members of Columbia University's First Utility Management Workshop—attempted through consultation, research, and discussion to analyze the utility executive's job and its requirements and to appraise methods of executive training for the industry. Now their findings, published by Columbia's Department of Industrial Engineering in a 70-page volume compiled primarily as a permanent record of the Workshop for its participants, are available to the industry for $5.00 per copy.

Entitled *The Utility Executive: His Job and His Training*, the material is divided into two major sections. The first part, "A New Look at the Executive," is a functional analysis of the utility executive's job and its component parts, including planning, decision-making, public relations (with both employee and community relations emphasized), human relations, supervision, and control. Three general types of training—on-the-job training, group training, and individual development—are treated in "Executive Training Program," the second section. In addition, this section includes a chart designed to evaluate ten forms of training methods according to their part in the development of various desirable qualities for the utility executive. Listings are made of these desirable characteristics, as are guides for the administering of an executive development program.

Flexible Outlines

Nowhere in the volume are conclusions drawn as absolutes or universal cure-alls. Instead, findings are presented as guide outlines, flexible to the individual demands of a given company. Throughout its pages, *The Utility Executive* stresses that the executive's job and the person who fills it are dynamic forces and that the problems of utility management are ever-changing with the constant reorganization of a progressive company to insure its favorable position within the industry.

Its preface states, "The material presented represents the thinking of many persons, and does not pretend to constitute a body of doctrine of conclusions representing the opinions of the Department of Industrial Engineering of Columbia University."

The approach developed by workshop members in their study was one which considers the real job of an executive as a way of getting things done with the least expenditure of time, money, and effort and which regards management's problems as the creation of an atmosphere in which subordinates, equals, and superiors will release their creative effort in pursuit of a mutual goal. Their conclusions reflect both the members' own actual experiences and their knowledge gained from the lectures and source material covering utility management and executive development from the early "Decide, Order, and Drive" practices to modern group dynamic theory which embodies "Explain, Sell, and Lead."

Speech Summaries

Arranged chronologically as a day-by-day account of Workshop studies, *The Utility Executive* recreates the consultation aids of the executive through summaries of formal talks by faculty members and the group's guest speakers. These included such specialists as James Carpenter, Vice-President, Long Island Lighting Co.; John E. Conley, McCormick and Co.; E. S. Evans, Edison Electric Institute; Dr. John Foley, Psychological Corp.; Earl C. Planty, Johnson and Johnson; Fred R. Rauch, Vice-President, The Cincinnati Gas and Electric Co.; and Dr. Erwin Schell, Massachusetts Institute of Technology.

The Utility Executive supplements its 66 digests, outlines, and summaries of workshop papers with 15 reproductions of display charts used by the members. Seven photographs of the sessions are also included.

The Second Utility Management Workshop, scheduled by Columbia for May 18-29, 1953, will consider the questions, "What individual characteristics does an executive job require?" and "How can these individual characteristics be discovered and developed?"

Seven Electric Companies Sponsor World's Largest Network Analyzer

CONTRACTS have been signed by The Franklin Institute of Philadelphia, Pa., and seven electric companies in Pennsylvania, New Jersey, and Delaware for the installation of an a-c network analyzer in the Institute's industrial research laboratories. The $400,000 analyzer, which will be the world's largest, is being built by the Westinghouse Electric Corp. and will be placed in operation in the summer of 1954.

The seven electric companies—Atlantic City Electric Co., Delaware Power and Light Co., Jersey Central Power and Light Co., Metropolitan Edison Co., New Jersey Power and Light Co., Pennsylvania Electric Co., and Philadelphia Electric Co.—will use the modern computing device to help their engineers solve the complex problems involved in maintaining and expanding power systems. It has been agreed that, should the companies not require all the time they are allotted, the device will also be placed at the disposal of other utilities.

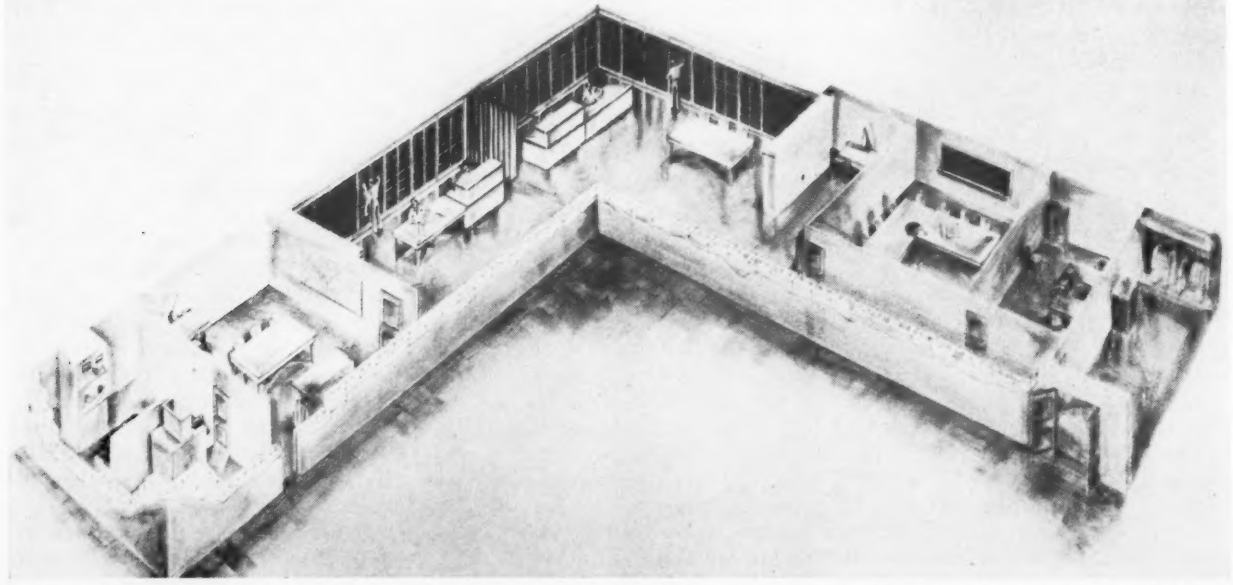
The analyzer will actually be a power system in miniature, with a typical scale factor of 1 to 100,000. Its maze of circuits will represent generators, transmission lines, transformers, and loads. In minutes, or hours at most, an operator will be able to connect (by means of patch panels) these elements in imitation of any given power system. By metering current, voltage, and power at any point in the system, he will be able to discover how a full-scale system works or will work, if it has not yet been built, and how it might be modified to give maximum service.

The first step in setting up a problem will be to make a single-line diagram of the system in question, noting thereon the values of the system's components. For example, impedances would be expressed in ohms or in per cent on a kva base. The diagram will be mounted near the instrument panel on a translucent board behind which will be small lights to indicate circuits that are being metered. Lines, transformers, current-limiting reactors, and the internal impedances of generators will be represented by resistance and reactance circuits in the analyzer. Loads will be represented by shunt impedances. Capacitors will simulate synchronous or static condensers, and single-phase power sources, with both voltage and phase angle separately adjustable, will represent generators.

When a convenient scale factor has been chosen and after the analyzer circuits have been connected to conform to the drawing, the operator will employ the master instruments —a voltmeter, ammeter, and watt-var-meter—to monitor the system at whatever points he chooses. Multipliers will reverse the scale of the analyzer and allow the meters to give actual values of current voltage and power.

The analyzer will incorporate 580 circuits in two separate units, one having one-third, the other two-thirds of the total capacity of the device. Each unit will operate separately or in conjunction with the other as necessary. An operator at either of the two instrument control desks, one associated with each unit, will be able to make measurements throughout the entire analyzer.

In addition to its 580 circuits, the analyzer will consist of hundreds of relays, more than 20 miles of wire, and 152 indicating instruments, and its attendant facilities — including conference rooms, offices, storage space, power supply and air-conditioning machinery—will occupy 2500 sq ft. Upon completion, it will be able to simulate a power system comprising as many as 28 generating stations, 270 transmission lines, 90 large blocks of load, 50 tap-changing transformers, 18 one-to-one ratio transformers, and 90 capacitors.



Artist's conception of the proposed analyzer at The Franklin Institute shows, from lower left, air-conditioning machinery and power room housing M-G set, conference room, area containing the two units, second conference room, office, and foyer.

Stimulating and Varied Program Planned for EEI-AGA Accounting Conference

A STIMULATING program covering numerous accounting subjects is being prepared for the forthcoming National Conference of Electric and Gas Utility Accountants, to be held Monday through Wednesday, April 20-22, 1953, at the Hotel Sherman, Chicago, Ill. The conference is sponsored jointly by the Accounting Division of the Edison Electric Institute and the Accounting Section of the American Gas Association.

Registration will commence at 8:30 a.m. on Monday and will continue throughout the period of the conference.

General Session

The conference will open with a general session at 2 p. m. on Monday, at which time a welcome to Chicago on behalf of the Peoples Gas Light and Coke Co. will be extended by James F. Oates, Jr., Chairman of the company. Words of greeting will also be expressed by representatives of both EEI and AGA. The session will be presided over by E. L. Cassady, Chairman of the EEI Accounting Division, and B. S. Rodey, Jr., Chairman of the AGA Accounting Section.

Principal speakers at the general session will be Spencer B. Eddy, Commissioner, Public Service Commission of the State of New York; Harold Quinton, Executive Vice President, Southern California Edison Co.; and Kenneth W. Haagensen, Director of Public Relations, Allis Chalmers Manufacturing Co. Their talks will deal, respectively, with accounting trends in utility regulation; cost consciousness in a changing economy; and the human side of our business, customer and employee relations. In addition, George U. Callens, Assistant Personnel Coordinator for Accounting Departments, The Detroit Edison Co., will present an illustrated case study on the subject of supervisory selection.

Following the general session, the standing committees will present their programs in sessions on Tuesday morning and afternoon and on Wednesday morning, with the Customer Activities Committees holding luncheons on Tuesday noon and continuing their meetings throughout the afternoon. The Customer Activities Groups plan to hold joint sessions on Tuesday and Wednesday mornings.

E. L. CASSADY

Chairman of the Accounting Division Executive Comittee

General and Depreciation Accounting

Among the topics of a general accounting nature to be considered at the conference will be accounting techniques for the control of small expendable hand tools and other portable tools, budgeting and forecasting, rate of return versus interest during construction, highlights of a report on 1951 and 1952 annual reports to stockholders, a summary of various payroll practices, and functions and responsibilities of methods departments.

At a half-day session on Tuesday morning, April 21, the Depreciation Committee will meet jointly with the Taxation Accounting and General Accounting Committees. At its Tuesday afternoon session, the committee will present a fourth annual report on what the courts and commissions said about depreciation in 1952 and an interim report studying the effect of price levels on the replacement of depreciable property. The adequacy of present depreciation provisions based on original costs and a lawyer's look at the problems of retroactive adjustments of depreciation are among other items to be considered. A presentation on the application of actuarial analysis to depreciation accounting for public utilities will also be included in this afternoon session. On Wednesday morning, April 22, at a half-day panel session, the Depreciation Committee will meet jointly with the Plant Accounting Committee in conducting a question and answer program, with H. R. Flanegan, Philadelphia Electric Co., as moderator.

Customer Activities

Customer accounting activities at the conference will include summarization of various company procedures employed in preparing meter readings for billing, as well as distribution of a revised edition of the directory of customer accounting methods and equipment. Unusual rerouting plans and methods of improving meter-reading efficiency will also be considered.

Justification for reconnection charges, forfeited discounts, collection charges, and effective off-system collection methods will be among the items of concern to conferees interested in customer collections.

By conference time, it is expected that considerable progress will have been made on the customer relations project on training by manual and film, and a report at the meeting should indicate that completion is not far distant. The technique of handling high bill complaints, how customer-contact employees talk to consumers about rate increases, and keeping customers informed about restoration of services during emergencies will also be included in other customer relations subjects to be discussed.

Three papers dealing with internal auditing in its various phases will

be presented at a Tuesday morning, April 21, session of the Internal Auditing Committee. On Tuesday afternoon a guest speaker will speak on developing criteria for a more effective internal audit, and this will be followed by a question and answer period. Two new *Internal Auditing Manual* sections—one on the audit of property, plant, and equipment and the other on auditing an insurance department—and a report on auditing case studies will also be included in material to be reviewed at the Internal Auditing Committee session. In addition, the committee is planning to conduct a work-shop panel on Wednesday morning, April 22, comparable to similar sessions held in previous years.

The Plant Accounting and Property Records Committees are developing a full-day program which will include, at the Tuesday morning session, a panel on plant accounting, with L. E. Reynolds, The Connecticut Light & Power Co., as moderator. Papers on continuing property records for station piping, wiring, and conduits and plant record reports to management will form the basis of subject matter to be developed at the afternoon session.

The Taxation Accounting Committees, in addition to meeting in joint session on Tuesday morning with the General Accounting and Depreciation Committees, are developing material for discussion at their Tuesday afternoon and Wednesday morning sessions, at which time reports from various subcommittees will also be presented.

At a Wednesday morning session, the Accounting Employee Relations Committee will consider questions and answers resulting from the report on supervisory selection made at the general session. Following this, five presentations in the form of discussions led by members of the committee will be conducted on specialization, intra-office communications, and other phases of employee relations as they pertain to accounting personnel.

In order that accounting personnel and executives attending the conference may become acquainted with the latest office equipment, an office-machines display will be provided, as in previous years, and companies having indicated their intention of exhibiting include:

Addressograph Multigraph Corp.
Burroughs Adding Machine Co.
International Business Machines Corp.
Monroe Calculating Machine Co., Inc.
Recordak Corp.
Remington Rand, Inc.
The National Cash Register Co.
The Standard Register Co.
Watson Manufacturing Co., Inc.

So that registrants will have opportunity to mingle socially, a banquet will be held on Tuesday, April 21, starting at 7 p.m., during which musical entertainment will be offered. For the ladies who accompany registrants to the conference, a special program beginning at noon on Tuesday is being arranged. In addition tickets for radio and television broadcasts will be available to the ladies.

PP&L Develops Unique Method of Feeding Emergency Crews in Isolated Areas

WHEN a heavy ice storm recently struck three of its divisions with sudden fury, Pennsylvania Power & Light Co. immediately placed its prearranged emergency program into operation; crews and repair equipment were rushed to trouble spots to restore disrupted service; and company officials tackled the problem of feeding personnel in isolated areas.

In times of emergency, this problem of supplying crews with hot meals is intensified by the additional employees assigned to a stricken region and by the lack of restaurant facilities in outlying areas or in areas where commercial establishments have been crippled by power outages. Thus as PP&L officials began mapping routes by which crews might be brought to food sources, it seemed that vital hours of working time would be lost in travel to and from such sources.

Then someone suggested that a Salvation Army canteen wagon be used to bring food to men on the job, and this led to a unique solution to the problem. Though it was determined that the wagon would be inadequate, someone else proposed that the services of a caterer be secured. The third caterer contacted, the Amici Catering Co. of Allentown, accepted the assignment of feeding the crews and on a Sunday sent two trucks into the field. With a PP&L fieldman aboard as guide, each truck had thermos compartments and containers to keep food and coffee hot, and every crew was visited.

The first day's menu included hot roast beef, peas, mashed potatoes, gravy, bread and butter, and coffee with cream and sugar. Each lineman was also given a package of cigarettes. Menus were varied throughout the remaining days of the emergency, and each meal was served on china, with settings of silver supplied.

This in-the-field catering fulfilled its two major objectives. Employees were fed hot food, and all they wanted, right on the job. Secondly, precious daylight hours were saved for actual work, an estimated saving of two and one-half hours daily for each man.

On this basis, a total of 671 meals served indicated approximately 1700 man-hours saved. Of these 671 meals, 110 were served on Sunday, 155 on Monday, 133 on Tuesday, 173 on Wednesday, and 100 on Thursday. The two trucks used in the operation, one of them rented, together travelled about 800 miles. As a matter of routine, one of the trucks had to be towed through a three-block long stretch of muddy road each day.

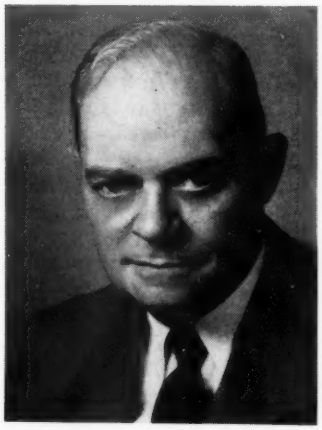
In all the catering company prepared 150 gal of coffee, 324 lb of beef, 200 lb of ham, 175 lb of pork, 800 lb of mashed potatoes, and 160 lb of vegetables. Enough apple pies to feed 750 men were baked, and 300 large cups of ice cream and 20 lb of butter were distributed.

As another feature of the emergency program, PP&L arranged to have hot breakfasts served in an Allentown hotel for the 150 linemen from outside the storm area. It was the responsibility of each foreman to get his crew to the dining room, and following breakfast the crews were transported in chartered buses to the service depot for assignment. There the line trucks were ready to roll each morning, having been restocked with materials and equipment overnight.

EEI Sales Conference Will Survey Sales Activities, Preview Selling Trends

TO convene in the Edgewater Beach Hotel in Chicago from March 30 to April 2, the 19th Annual EEI Sales Conference will review a wide range of specific sales activities, preview general selling trends, and have as its basic theme the increasing need for dynamic sales efforts.

The conference will begin on Monday with the Home Service Conference and concurrent all-day meetings of Commercial Division Committees. The EEI Industrial Power and Heating, Residential, Commercial Sales, and Farm Sections will hold meetings on Tuesday, followed by general sessions throughout Wednesday and on Thursday morning. The annual sales meeting will close with a luncheon on Thursday, at which Charles T. Evans, Assistant to the President, Arkansas Power and Light Co., will discuss industry developments.



J. R. HARTMAN
Chairman of the Commercial Division General Committee

General Sessions

J. Reed Hartman, Chairman of the EEI Commercial Division General Committee and Vice President of The Cincinnati Gas and Electric Co., will preside at the general sessions, beginning on Wednesday morning, and will deliver opening remarks which will summarize committee achievements of the past year and outline future project plans.

B. L. England, Institute President and President of the Atlantic City Electric Co., will present "Today and Tomorrow in Our Industry," a broad review of the industry's problems and progress, with a forecast of future trends. Martin R. Gainsbrugh, Director of the Division of Business Economics, National Industrial Conference Board, Inc., will describe "The Economic Outlook" for the industry, as it is determined by general business conditions.

This will be followed by presentation of the prize awards made annually through the Institute. Harry Restofski, Chairman of the EEI Prize Awards Committee and Vice President of the West Penn Power Co., will announce winners of the Thomas W. Martin Rural Electrification Award; George A. Hughes Awards for electric appliance promotion; Laura McCall Awards for home service activities; Planned Lighting Awards; Frank Watts Award for promotion of electrically operated farm equipment; George Westinghouse Awards for promotion of electric laundry equipment; and the More Power to America Award for advances in industrial electrification.

First speaker of the Wednesday afternoon session will be James E. Jewell, Vice President of the Westinghouse Electric Corp., whose subject will be "Reaching the Industrial Market." Lowell B. Mason of the Federal Trade Commission will present a talk entitled "Why Men Climb Mountains," and Wheeler McMillen, Editor-in-Chief of the *Farm Journal*, will describe "Agriculture's Impact on the Electric Industry." Closing the session will be a discussion of "More Effective Selling Through Human Engineering" by Victor W. Short, President of the Institute of Human Science.

The concluding general session, Thursday morning, will begin with a talk, "Let's Get Up to Date on Room Air-Conditioners," by John M. Otter, Vice President and General Manager of the Refrigeration Division, Philco Corp. Clarence H. Linder, General Manager of the Major Appliance Division, General Electric Co., will discuss "Appliances Unlimited," and the Commercial Lighting Committee will present its dramatized story of commercial lighting opportunities, "We Have Watts to Burn." Concluding the session will be a talk entitled "Leaders Are Made, Not Born," by Jackson Martindell, President of the American Institute of Management. The general luncheon will follow.

Commercial Sales Section

The EEI Commercial Sales Section will convene on Tuesday morning with S. S. Sansbury, Chairman of the EEI Commercial Sales Section and Manager of the Development and Training Division, Union Electric Co. of Missouri, presiding. The opening presentation will be a panel discussion on "Modernization Clinics as Sales Tools," led by J. C. Murtha, Manager of the Sales Engineering Bureau, Consolidated Edison Co. of New York, Inc. Panel members will be John W. H. Evans, Managing Director of the Store Modernization Institute, and B. J. Martin, President of B. J. Martin & Co. Concluding the morning session will be three talks: "Kellogg Center's Contribution to Hotel and Restaurant Education," by Leslie W. Scott, Director of Kellogg Center, Michigan State College; "Commercial Lighting Activities," by R. W. Butts, Chairman of the EEI Commercial Lighting Committee and General Manager of Commercial Sales for Ohio Edison Co.; and "Visual Aids for Street Lighting Education," by R. M. Hoot, Lighting Adviser of Philadelphia Electric Co.

The afternoon session will concern itself with commercial cooking and lighting. H. M. Blackburn, Commercial Cooking Specialist of the Potomac Electric Power Co., will discuss "Inter-Area Groups." A special demonstration of "Microwave Commercial Electric Cooking" using two high-frequency ranges will be staged by Frederick H. Brooke, Jr.,

Manager of the Radarange Division, Raytheon Manufacturing Co.; Philip York, Electric Engineer; and Craig Pierce, Food Service Engineer. This will be followed by a talk, "Let's Stop Treating Street Lighting as a Stepchild," by Harry Restofski, Vice President of the West Penn Power Co., and concluding the session will be a presentation on "American Standards Practice for Street and Highway Lighting" by C. H. Rex, Rectifier and Lighting Division, General Electric Co.

Farm Section

R. T. Jones, Manager of Farm Sales, Pennsylvania Power & Light Co., will preside at the morning session, and J. C. Cahill, Farm Service Coordinator for The Detroit Edison Co., at the afternoon session of the Farm Section on Thursday. Following opening remarks by E. D. Smith, Chairman of the EEI Farm Section and Supervisor of the Rural Department, The Dayton Power and Light Co., will be a talk entitled "The Rural Market Is the Big Opportunity for 1953" by E. O. George, Manager of Sales for Detroit Edison. Roy W. Godley, Agricultural Counsel of The Kroger Co., will discuss "Agricultural Developments and Their Impact on Sales," and Guy L. Noble, Director of the National Committee on Boys and Girls Club Work, Inc., will talk on "Youth and Industry March On."

Merritt D. Hill, Vice President, Dearborn Motors Corp., will address the luncheon session at noon.

The afternoon session will include the following talks: "Farm Equipment Potentials," by Paul W. Chapman, Associate Dean of the College of Agriculture, University of Georgia; "Household Appliances Make the Difference," by J. Rushten, NEMA Farm and Rural Market Development Committee; and "Now Is the Time for Action," by Benjamin G. Sanderson, General Sales Manager of the Deepfreeze Appliance Division, Motor Products Corp.

Industrial Power and Heating Section

Presiding at the Tuesday morning session of the EEI Industrial Power and Heating Section will be P. W. McCormick, Chairman of the EEI Competitive Service Committee and Industrial Sales Manager of the Union Electric Co. of Missouri. Following opening remarks by Maxwell Cole, Chairman of the EEI Industrial Power and Heating Section and Manager of the Market Studies and Service Division, Philadelphia Electric Co., a talk entitled "Man — It Satisfies," will be given by Frank E. Wiatt, Assistant Manager of the Electric Department, The Cincinnati Gas and Electric Co. Don Russell, District Manager of Factory Stores Inc., will discuss "In-Plant Feeding," and D. C. Hooper, Manager of Market Planning, Westinghouse Electric Corp., will conclude the session with a "Forecast of Use of Electric Energy by Industries."

The afternoon session, with Maxwell Cole presiding, will begin with a description of "Mass Selling," by George E. Duerr, Industrial Sales Manager of the West Penn Power Co. The Edwin L. Weigand Co. will then show its film, "This Amazing Heat," describing advantages of electric heat for industry, and "The Chemical Industry and Purchased Power" will be examined by H. Carl Bauman of the Chemical Construction Corp. Concluding will be a forecast of "Your Brilliant Future," by S. L. Drumm, Vice President of New Orleans Public Service, Inc.

Residential Section

The Residential Section will convene Tuesday morning with George L. Lahodny, Chairman of the EEI Television Committee and Assistant to the Vice President, The Detroit Edison Co., presiding. After opening remarks by R. J. Miller, Chairman of the EEI Residential Section and Assistant to the General Sales Manager, The Cleveland Electric Illuminating Co., George B. Byington of the Wisconsin Power and Light Co. will outline "Demonstrations That Sell Residential Lighting." Mrs. Harriet G. West, Director of the Home Service Division, Indianapolis Power and Light Co., will describe "The New Cook's Cook Book," and Arthur S. Goldman, Director of Marketing and Research, *House and Home* magazine, will discuss "Using the Open-End Mortgage to Sell Wiring and Appliances."

The EEI Electric Water Heating Committee will present "Profits in Gals.," and a panel discussion entitled "As Usual, the Editors Find Fault," moderated by Frank R. Innes, Associate Editor of *Electrical World* magazine, will feature Miss Bernice Strawn of *Woman's Home Companion*, Mrs. Elizabeth Sweeney Herbert of *McCall's* magazine, George Taubeneck of *Air Conditioning and Refrigeration News*, and Laurence Wray of *Electrical Merchandising* magazine.

Presiding at the afternoon session will be Donald E. Bootes, Chairman of the EEI Residential Lighting Committee and Director of the Home Service Department, The Dayton Power and Light Co. "New Ideas Through Dealer Workshops" will be reviewed by M. R. Norton, Chairman of the EEI Dealer Coordination Committee and Dealer Sales Promotion Manager, Wisconsin Power and Light Co., and Harold P. Bull, General Sales Manager, Bendix Home Appliances, will describe "New Horizons in Residential Load Building." H. H. Brenan, Chairman of the EEI Electric Kitchen and Laundry Committee and Manager of the Residential Sales Department, Pennsylvania Power & Light Co., will outline "A Coordinated Program to Sell Electric Ranges," and a "Videotown Survey" will be presented by G. W. Tasker, Vice President for Marketing, Cunningham and Walsh, Inc. The "Health Home Council" will be explained by E. O. George, Manager of Sales, The Detroit Edison Co., and concluding the session will be "A Plan for Sales Training" by Spencer S. Meilstrup, Appliance Sales Manager, Frigidaire Sales Corp.

Home Service Conference

The Home Service Conference will be opened on Monday morning by Miss Elizabeth Williams, Chairman of the EEI Home Service Committee and Home Service Director of the Monongahela Power Co. Following will be a discussion of "Demonstration Ideas that Build Load," which will include talks on "The Electric Water Heater," by Miss Helen Kirtland of the Hotpoint Institute; "The Electric Dryer," by Miss Verna L. Miller of the Frigidaire Corp.; and "The Electric Range and Freezer," by Miss Karen Fladoes of the Nash Kelvinator Corp. Miss Irene L. Muntz, Manager of the Home Service and Home Lighting Department, Rochester Gas and Electric Corp., will then show how "Home Service Promotes Home Safety."

The afternoon session will concern

(*Continued on page* 91)

The Planning Picture for Kansas City Power & Light Co.

C. Myron Little
Manager, Engineering Department
Kansas City Power & Light Company

J. S. Palmer
Director, System Planning Department
Kansas City Power & Light Company

A paper before the EEI Electrical Equipment Committee, St. Louis, Mo., February 16, 1953

KANSAS CITY POWER & LIGHT CO. today has a 450-megawatt system, having grown from a 150-megawatt system in the past 12 years. Almost any article today, or any talk, regarding system growths will caution that system load will be doubling during the next decade. Our system is not going to be, nor has it been, an exception to this trend. We have been busy in Kansas City expanding our system to meet new loads.

The company is engaged in the electric business in 75 incorporated communities and in the suburban and rural areas of 25 counties in Missouri, Kansas, and Iowa. The total population in our Kansas and Missouri service area was 732,000 as of 1950. Kansas City, Mo., with its nearly 500,000 people, is the largest community served. Kansas City is a natural air and railroad center near the geographical center of the United States, and we find ourselves an important agricultural, manufacturing, and distribution center for a large trading area. Though we are nineteenth in population, we are ninth in bank clearings, which, to some degree, shows the position Kansas City holds.

Included in our Missouri and Kansas operations are three generating plants with a total capability today of 645 mva which will grow to 880 mva in 1955. We have 222 miles of 161-kv, 42 miles of 115-kv, and 140 miles of 69-kv transmission, 631 miles of 33-kv, 310 miles of underground cable, and 75 miles of overhead 13.8-kv subtransmission. Our distribution consists of many miles of overhead and underground 4 kv, four wire in and adjacent to Kansas City and 12 kv, four wire suburban and rural. In addition to the foregoing, we have several 120/208 a-c network systems, the largest being in the downtown area with an installed transformer capacity of 38,500 kva.

So much for a thumbnail description of our system. Our development has been gradual, and the process has been guided by general fundamental policies which were formulated from time to time and are being adhered to today. We have attempted to maintain a reserve or a spare capacity determined by a probability method. We have aimed at providing a minimum, but adequate, degree of reliability. It has been only in recent years that we were large enough to give a great deal of attention to reinforcing our tie system interconnecting generating plants and, more especially, with other systems to minimize the required over-all system reserve capacity. We, as is everyone, are making every attempt toward developing a system that provides dependable service at the lowest cost for long periods of time, and, with thorough searching now, we will insure against the future bottlenecks that may stand in the way of greater growths and the resultant expansion.

We, as yet, have not developed any written rules of service continuity such as are used by the larger systems as system planning basic design specifications, but our treatment of continuity for customers' needs has not been at variance with the industry in general. We have made the usual preparations for the removal of certain pieces of equipment from service for maintenance and repairs, for emergency service to customers served from overhead lines, and for complete stand-bys for cables that necessarily take long periods for repairs. Substations that cannot be firmed from neighboring substations are firmed with spare transformers. We are most careful in protecting against the long-time outage, and special deliberations are held and plans made regarding the possible short outages of a great number of customers or a large block of load.

For the past ten years we have been in the midst of a rapid expansion program like most other utilities in this country. We have more than doubled our peak demand. Power transmission voltages have changed considerably and must change just as greatly in the years to come.

At the start of World War II, this company's main load was within the confines of urban Kansas City, Mo. The load was fed through cables and some overhead lines directly from the power plants at (13.2 kv) generated voltage. These plants were on the fringe of the heavy load density area of Kansas City and the Missouri River. A small 33-kv system, 22,500-kva fed from a substation near one of the power plants, served the suburban area around Kansas City and was extended south and westward to serve an area in east central Kansas and some coal stripmining shovels at Hume, Mo. In addition a 6,000-kva substation served a 40-mile, 66-kv line from Kansas City to an area in the west central part of Missouri, and there it was stepped down and was connected to a 150-mile long, 33,000-v loop.

Early in the last war the establishment of an arms factory east of Kansas City, and a government L-94 order to interconnect with the municipal system of Kansas City, Kan., resulted in increasing the capacity input to this 66-kv system to 33,000 kva. In addition, defense plants in

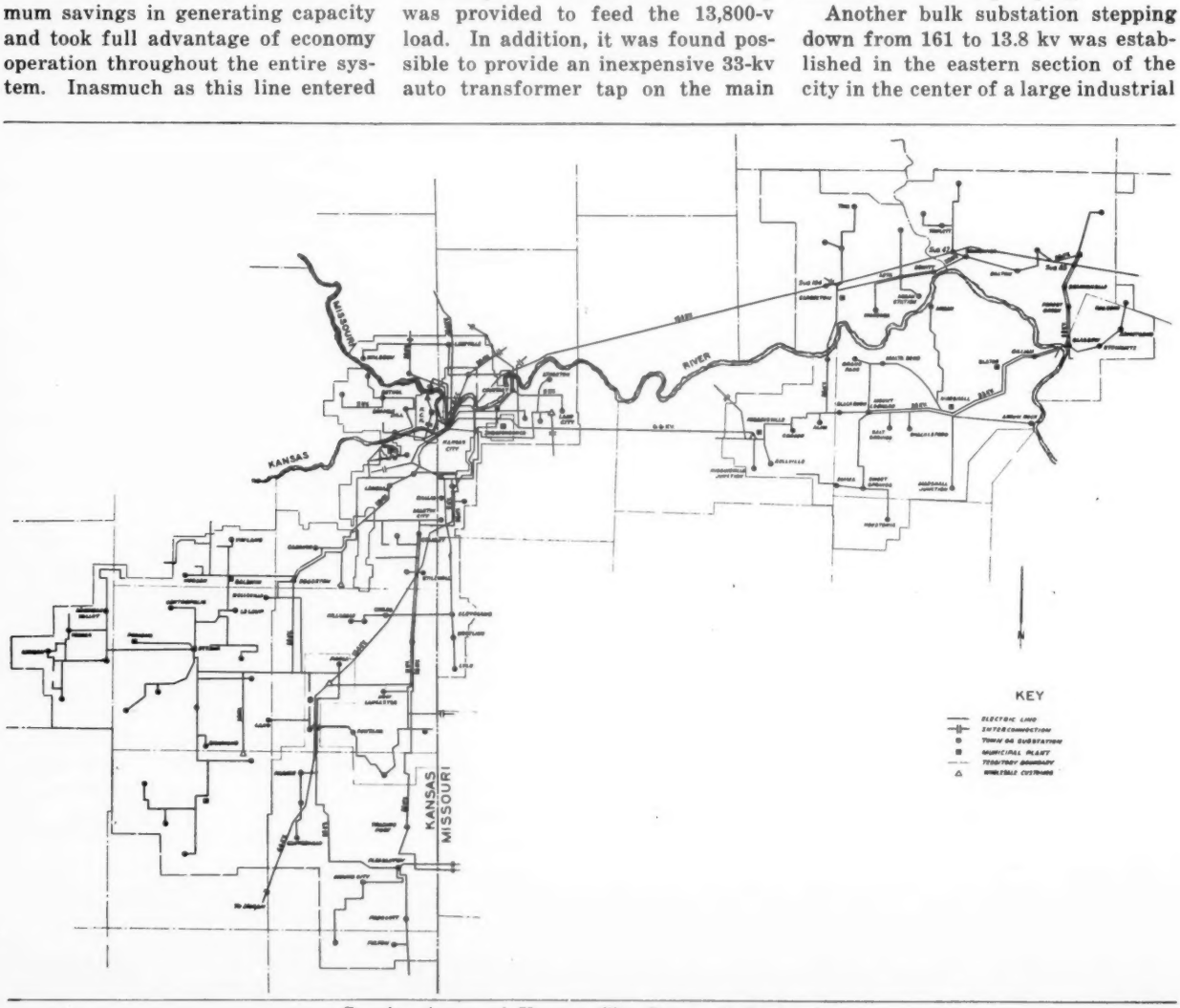
Sunflower, Kan., and an aircraft engine plant south of Kansas City resulted in the government building a 115-kv line from one of our power plants through Kansas City, Kan., to the west, with a branch to the southern part of Kansas City, Mo., for serving the aircraft engine plant. This line is served through an 80,000-kva step-up bank from an adjacent 13.8-kv generating plant bus.

At the end of the war, United Light & Railways Co. embarked on a program of interconnecting its properties, of which our company was then a part, and built a 161,000-v transmission line from Davenport, Iowa, to Des Moines to St. Joseph to Kansas City to Paola, Kan., and thence to Moran, Kan., at 66 kv to connect to Eastern Kansas Utilities at that point. The interconnection contract, written to use the line, allowed maximum savings in generating capacity and took full advantage of economy operation throughout the entire system. Inasmuch as this line entered Kansas City from the north and west and thence extended around the east side of Kansas City and on to the southwest, it became an ideal start of a backbone for serving loads in the southern area of Kansas City, Mo., which were some 12 miles from the power plants.

Service by 13,200-v cables into this area was becoming untenable. As a result, a bulk substation was built in the southern area of Kansas City. The initial plan was for a 25,000-kva, 161,000-to 13,800-v transformer to feed back into Kansas City from the south. Before these plans had progressed very far, this transformer was enlarged to become an 80,000-kva auto transformer to tie the 161,000-v system to the 115-kv government line which was approximately three-quarters of a mile away at this point. A 25,000-kva tertiary was provided to feed the 13,800-v load. In addition, it was found possible to provide an inexpensive 33-kv auto transformer tap on the main winding which was tied into the 33,000-v system serving the surrounding suburban area.

Along with other cities of our size, we found that the main growth of the city in the post-war years occurred in the suburban areas, and the 33,000-v system changed to a major distributing system almost overnight, and as a result it was necessary to enlarge the original 33-kv substation to 45,000-kva capacity and build a substation at the southern terminus of the 161-kv line at Paola to feed the 33-kv system in east central Kansas. The rural system in east central Kansas was growing very rapidly as a result of our expansion to serve all farmers and to serve a new industry which was reclaiming additional oil from old oil fields previously exhausted by normal means of pumping.

Another bulk substation stepping down from 161 to 13.8 kv was established in the eastern section of the city in the center of a large industrial



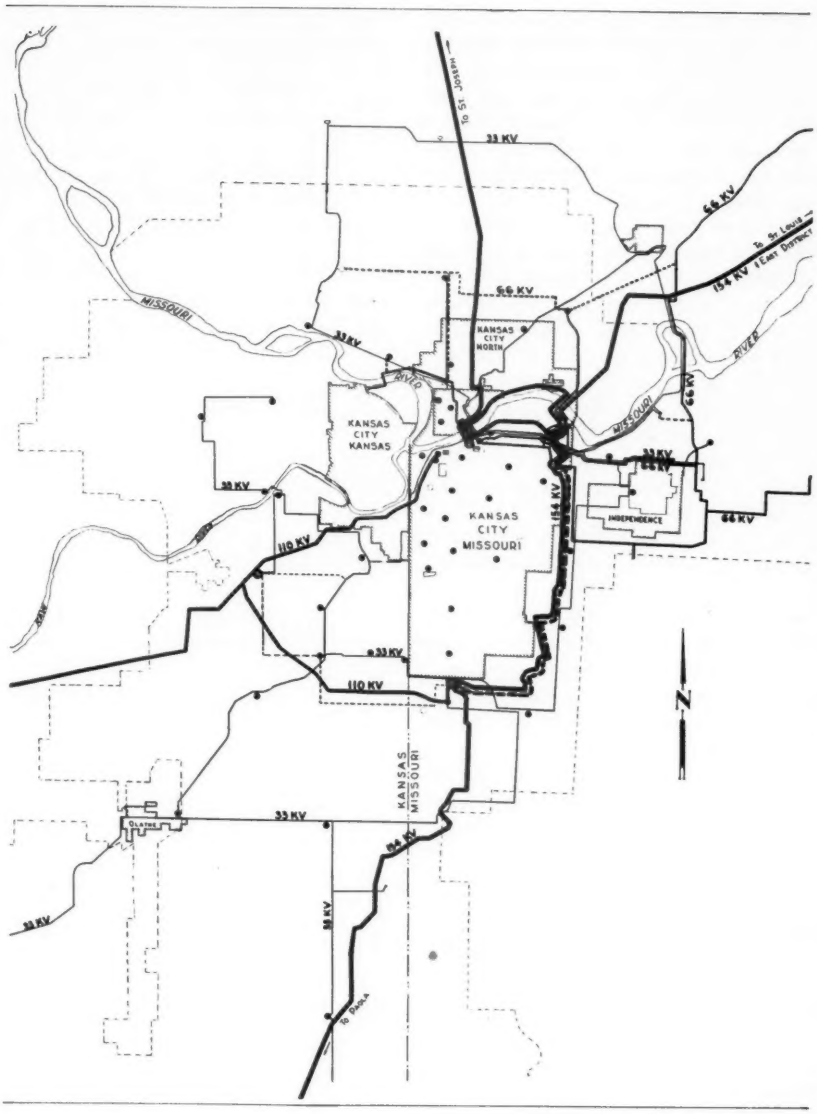
Service Areas of Kansas City Power & Light Co.

Blue Valley area to relieve overloaded cables and circuits in this area. By establishing these two major substations at the east and south of Kansas City and building short feeders to connect onto present cable circuits in the area, it was possible to serve large increases in load by backfeeding on these cables. The system as described above first went into operation in 1948, and since that time a second 60-mva transformer for operation in 1954 has been purchased for the Blue Valley substation east of Kansas City. Two additional 25-mva transformers have been purchased for the substation south of Kansas City, one to feed the 33-kv system and one to feed the 13.8-kv system.

In addition, during the past year, we have installed a 25-mva transformer in a new substation south and west of Kansas City on the 115-kv line to step down to 33 kv. This is to serve a large growing residential community in Northeast Johnson County, Kan. By contract with the government, we have obtained a 20-year lease on the use of these 115,000-v facilities and have assimilated them into our system. A further 25-mva expansion is planned for the Northeast Johnson County substation in the next two or three years.

In 1951, our third power plant, Hawthorn Station, was built some three miles east of our present Northeast power plant and was connected into the 161-kv system between Northeast and Blue Valley substations.

In planning the generating station at Hawthorn, it was decided that the generators should step up directly to 161,000 v as unit machines. Since this new plant was very close to a very large potential industrial area, provisions were made to feed 13,800 v directly from the plant; for example, a 25-mva electric arc furnace we are now serving at 13.8 kv using the small bus as a flicker bus. In addition, it proved feasible to expand the 66,000-v system by transferring one of these new machines on a unit basis to the 66,000-v system. This generating plant originally was considered to house six 40-mw generators. While under design, the first two units were changed to 60/66 mw and the third unit to a 90/99 mw. The first two units went into operation in 1951, the third unit is scheduled for June, 1953, and presently the fourth, also to be a 90/99 mw, is scheduled for 1955; thus there will be a total nameplate of 330 mw exceeding the original size plant as planned.



Detail of Kansas City, Mo., and Kansas City, Kan., Service Area

The necessity for increasing power supply to our East District in east central Missouri to serve increased urban and suburban loads in the area and to supply pipe-line pumping loads required the construction of a 161,000-v line from Hawthorn Station into this area. This line was extended on to Moberly, Mo., and Bagnell Dam for interconnection with Union Electric Co. of Missouri. The line has been in operation approximately a year. In order to serve large concentrated pumping loads in our East District and to eliminate the need for conversion of 33 to 66 kv in the area, two substations were planned and placed in service in this area and a third one is now in the process of construction.

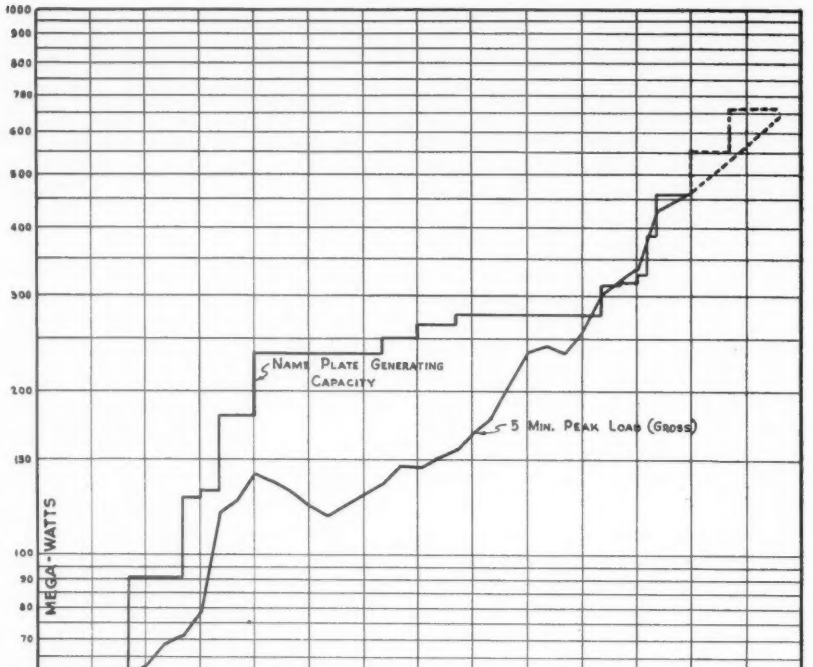
The over-all plan of a high-voltage loop around the Kansas City area, part of which is the 115-kv government line, with substations in the east, south, and to the west, is sufficient to satisfy growing loads until approximately 1956. We are now faced with the problem of either reinforcing this loop by building a second line around the east side of Kansas City and building new 13,800-v

cables into the central area of Kansas City or to build directly into the central area of urban Kansas City with high-voltage cables and construct one or two major substations between the power plants on the north and our bulk substation on the southern edge.

Studies of a long range plan extending 20 years in advance are now in progress in which a decision will be made as to high-voltage cables through the central part of Kansas City to serve additional bulk stations in the city. Part of the problem is whether the proposed underground cable should be 161,000-v tied directly into our present 161,000-v system or should be 66,000-v cables fed from the 161,000-v system on the south and from a 66,000-v bus on the north fed directly from generation. It has already been necessary in the last year to increase the size of our 66-kv system to serve an area north of the Missouri River which has been annexed by Kansas City and to place one of our new 66,000-kw generators directly on this system.

Studies show that additional power plants will probably be built at a much greater distance from Kansas City proper than our present three plants with a strong possibility of establishing a plant remote from Kansas City in a mine-mouth coal region to eliminate the high cost of shipping coal. Power from remote plants must be brought into the urban area at 161,000 v or higher. It thus appears very likely that over the ultimate period, the most feasible action would be to start in the near future the construction of a bulk substation in the urban Kansas City area fed by a 161,000-v cable from the high voltage system.

It is a pertinent sign of the rapid and continued growth of the electric utility business when a company such as ours, which ten years ago was feeding most of its load at its 13,200-v generated voltage, should now be contemplating by-passing completely the intermediate voltages and going directly to 161,000-v to feed the same areas that were formerly fed directly at 13,800 v.



KCP&L Load and Capacity in Megawatts

4-Kv Distribution

In planning the expansion of any distribution system, we are confronted with the basic problem of estimating the future loads that may be expected in the various districts the system serves and then determining ways and means of providing the additional capacity that may be necessary to handle any expected load increases. Ordinarily we take a look at the past to get a basis for estimating the future. A great amount of load data is available for our 4-kv system as far back as 27 years ago. From a study of these past records, we have observed that the average load growth has been six per cent per year over this 27-year period. This rate of load growth has, of course, varied from one year to another. Back in the depression days of 1932, there was actually a slight decrease, but in 1945 at the close of the war the rate of annual load growth jumped to 17 per cent.

On the basis of the present general opinion that business activity will continue above normal for at least one more year before a decline may set in, we expect the rate of load growth to be about eight per cent for the next two years on our 4-kv system. A two-year look into the future is most important. Most of the equipment necessary to add capacity to this system must be ordered at least 18-months before it can be received. A longer look into the future is also

necessary so that immediate installations will be in line with the future installations that are expected to be necessary. At this time, we believe that the rate of load growth will decline during the next five to ten years so that the overall rate of growth will approach the past average rate of six per cent.

As of December 31, 1952, our 4-kv system was fed by 23 substations with a total rated capacity of 203,500 kva. The sum of the peak loads on these substations was 200,000 kva, so it is readily seen that we have a minimum reserve. The total area served was about 100 sq miles. Most of the 4-kv system substations are fed from 13,200-v cables that come direct from the generating station busses, but some are fed at 13.2 kv from the bulk substations. There are also a few substations fed from overhead 13.2-kv peddler feeders, 33- and 66-kv overhead lines.

Numerous things must be taken into consideration when a new substation is to be established. Present day planning must take into consideration that the new station be well centered in the area that needs relief from overload, and connections to the existing 4-kv distribution lines should be accomplished at a minimum of expense. Consideration must also be given to the substation feeder and in this respect locations near existing duct lines are desirable. Finally, the problems that are causing increasing concern in locating new substations are the zoning or building restrictions, the need for beautification of the site, and the noise level of the installation.

Within the large urban area that is generally served by the 4-kv distribution system, there are other distribution systems for certain classes of customers in very localized districts. In the downtown district and in two outlying business districts, 120/208-v networks served by 13.2-kv cables have been established. Also in the downtown district and in most industrial districts, 13.8-kv distribution is available for large customers. It is planned to transfer loads from the 4-kv system to the heavier duty system whenever customer's loads become sufficiently great to justify the expense necessary to make the transfer or whenever they become too large to be served at 4 kv.

In areas surrounding the 4-kv system, we have the 12-kv distribution system and, as a result of numerous studies, it is more economical to expand this 12-kv system and transfer load from the 4-kv system to the 12-kv system than to expand the 4-kv system. This we are doing. The 4-kv system will, therefore, tend to shrink rather than expand in area in the future.

Considerable time is now being spent in the study of possibly eliminating the expansion of the 4-kv system in Kansas City proper and establishing a 7,600/13,200-v system to take up all future load growth that would normally come on the 4-kv system. If this idea proves practical, it appears that a progressive overhead distribution system rebuild will be necessary. Calculations indicate that this changeover of 4-kv overhead distribution system to a 13.2-kv system seems economically justifiable, but the operating and line construction problems involved are quite large and have not yet been evaluated.

12-Kv Distribution

Our 12-kv system was originally conceived to supply customers in the immediate rural areas around Kansas City who could not be readily served from the then existing 4-kv system. The 12-kv system was very excellent for this purpose, inasmuch as it was capable of transmitting energy to these customers for great distances on very small lightly constructed lines which meant a minimum of investment.

This original concept of the use of 12 kv for serving rural customers was quite sound, and the use of these lightly constructed lines was quite proper for the amount of load handled at that time. However, since these early days of the 12-kv system, cities have grown in physical size and a great deal of the growth was in the suburban areas adjacent to the cities and, in our case, had to be served by the 12-kv system, which has expanded from a small area to include eight counties in Eastern Kansas and four counties in Western Missouri. Loadwise, our suburban district has increased four and one-half times in the last decade.

At this time, we feel that the growth of our 12-kv system will continue for the next several years at its present rate because, even though our farm areas might appear to be reaching customer saturation, the urban aspects of the system are increasing to such a point that new customers are being added at a rate which will more than replace any loss of the rural type growth.

As mentioned initially, 12-kv systems were capable of carrying loads for very long distances, a characteristic which resulted in the construction of a vast amount of lines of relatively light construction. With the advent of urban densities on our 12-kv lines, loads far beyond the magnitude originally thought of are developing, thus calling for the use of larger conductor in our lines in order to adequately serve the areas concerned. We are starting a reconductoring program.

With particular areas growing as fast as the suburban sections around the larger cities, such as Kansas City, continual planning is necessary and care exercised so that short term relief measures will work into long range expansion programs. Our expansion linewise is now planned up to four times our present load, while substation transformer capacities are based upon short periods, say two to four years.

We find it more economical on our 12-kv system, with its present 15 per cent per annum growth, to increase the capacity of present substations and distribution lines rather than to install more substations and needed subtransmission.

While we have definite plans for approximately 15 years for this system, we are considering the possibilities of a higher voltage distribution system for the long range picture but are not far enough along in our studies to form any conclusions.

Kilovar Planning

A discussion on system planning would not be complete in these days without some remarks on kilovar planning. For the past year and for sometime in the future, we have and are adding approximately one kilovar in static capacitors for each one kilowatt in new load.

With the installation of 31,350 kvar in static capacitors during 1952, we now have approximately 100,000 kvar in corrective capacity, including static capacitors owned by customers and the var generation of our

(*Continued on page* 91)

Central Hudson's Reddy Rhyme Collects Bills Not Paid on Time

MANY things have inspired poets throughout the ages, but seldom has the presentation of a bill stimulated versification. Central Hudson Gas & Electric Corp., however, has in its files hundreds of poetical replies from customers who have received reminders of payments past due.

The reason for this widespread jingle writing in Central Hudson's service area is the delinquent notice that the company, like other companies, has been using for a number of years. Reproduced elsewhere on this page, it bears the message from Reddy Kilowatt, *I've worked for you with all my might/ I gave my best both day and night/ Like other workers I need my pay/ Won't you please pay me what's due—Today?*

Central Hudson has over 102,000 electric customers and 38,000 gas customers. These figures mean a lot of bills to be sent out and a lot to be paid, and obviously not all of them will be paid on time. Thus, it sometimes becomes necessary to employ the yellow and black delinquent notices with their poetical request for payment.

That chagrin is often the first reaction of a customer upon receiving one of these is shown by the following jingles sent to Central Hudson and directed to the attention of Reddy Kilowatt:

My face is red; my mind is blue
That I should have forgotten you.

I work all day, as busy as can be
My bill is due, I can plainly see
It must have slipped my simple mind
So here enclosed, remitted find.

Other customers admit that temporary financial difficulties made it impossible to render payment on time:

A school teacher salary
Is not such a lot
But nevertheless—
My bills aren't forgot

Here is the money
I didn't need the "remind"
I always pay bills
Though I may get behind.

Four years I have paid you
Including the tax
So don't get excited—
Reddy, relax!

Here's the wages due to you
I dislike to see you blue
I worked so hard to get this pay
So please excuse the slight delay.

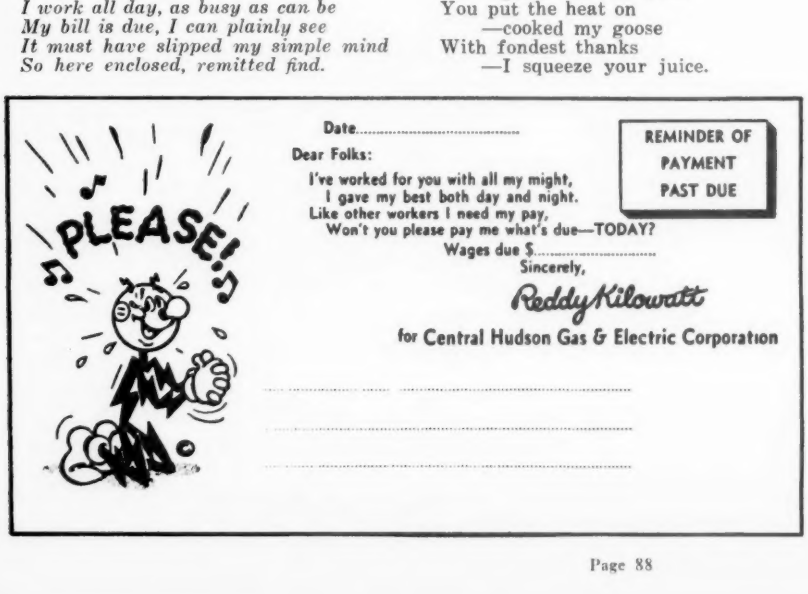
Not at all upset by the notice, still other customers compliment Reddy Kilowatt for the excellence of his service:

I appreciate you working day and night
To make my home so gay and bright
I've just been so busy, I forgot to pay
But since you reminded me, I'm sending it today.

Damned right you've worked with all your might
I've watched that meter day and night
I've twitched all night and sweated all day
To get this dough that's yours today.

One cliche expert expresses himself in this manner:

I am electrified
Herewith my check
—without excuse
I see the light
—please call a truce
You put the heat on
—cooked my goose
With fondest thanks
—I squeeze your juice.


PLEASE!
Date.....
Dear Folks:
I've worked for you with all my might,
I gave my best both day and night.
Like other workers I need my pay,
Won't you please pay me what's due—TODAY?
Wages due $.....
Sincerely,
Reddy Kilowatt
for Central Hudson Gas & Electric Corporation
REMINDER OF PAYMENT PAST DUE

Some customers explain in rhyme that their bill wasn't received because they had moved, or because it was delayed or lost in transit:

This little guy need not wait
All a-quiver at my gate
Simply use the right address
Which is now away out West.

Your card for two months failed to come
And this has made us worry some,
Had we received your bill when due
We would have paid what we owed you;
So, Reddy, stick right to your work
And do not try a bit to shirk,
Here is a check that clears our bill,
Please send receipt—we know you will.

Your service one could not forget,
I still remember it, even yet,
But your bill came after I had left
To see my folks out in the west,
And do some business on the side.
Tho' I missed your bill on the long, long ride,
Please, Reddy dear, be not offended,
Our friendship close must not be ended.
One dollar ten I am enclosing,
The gross amount required for closing.

Some time ago you worked for me
Clean, quick and fast you tried to be,
And when I upped and moved away
I did not just forget to pay;
What happened was, I write to say,
No bill arrived until today
Your wages now are overdue
But here you'll find five ninety-two.

A customer who thinks that he has already paid his bill writes:

Yes, you have worked pretty good
I really always knew you would,
And if I haven't got you paid
A sad mistake I must have made.

Your secretary doubtless knows
For she is always on her toes
A maid so charming, sweet, and fair
Is seldom seen most anywhere.

I really thought you'd had your pay
But I'll come in most any day
And see if we can both find out
What the trouble's all about.

Despite all this versification, the company occasionally receives a few words of prose commending the past-due notice:

Sorry for the delay. Frankly it had completely slipped my mind. But may I say I've never seen a nicer "memory jog" than your "Please" card. It was almost worth the extra amount payable to have seen that card . . . not quite but almost!

Whether in prose or poetry, however, these replies and the many others received by the company indicate that a past-due notice need not cause anger or bitterness. They show that imagination and whimsy can not only help collect a bill but also engender a feeling of good will within the customer as he pays it.

Accident Prevention Committee Meeting

W. F. Brown, *Chairman*

COMMITTEE reports, round table discussions, and film presentations highlighted the January 12-13, 1953, meeting of the Accident Prevention Committee which convened in the Muehlebach Hotel, Kansas City, Mo., and was attended by 83 members and guests. Many of the guests represented electric companies of the central United States area who had been especially invited to attend the sessions and participate in the committee's discussion. Also present was W. W. Lynch, President of the Texas Power and Light Co. and Chairman of the EEI Board of Directors Safety Subcommittee, who addressed the group, pointing to the need for continued attention to the reduction of electric shock accidents involving kite flying, crane and shovel operation, television antennas, and automobile crashes with utility poles and equipment.

A discussion of the accident rates of the business-managed electric utility industry and other industries revealed that during the past ten years the electric industry averaged 6700 lost-time accidents per year. The frequency rate averaged 13.07, while the severity rate was 2.04, or over a million days per year during each of the ten years from 1942 to 1951 inclusive. According to the National Safety Council's compilation of 1951 accident rates for major industries, electric companies stand 25th in a list of 40 industries rated according to the frequency of accident occurrence. The efforts of the Accident Prevention Committee are being exerted to better the industry's accident rates, not only by reducing the number of lost-time accidents but also by decreasing the industry's severity rate.

One of the most active of the Accident Prevention Committee's subgroups is the Regional Action Subcommittee presided over by Harold F. Webb. It is the responsibility of this subcommittee to maintain liaison with the regional associations of utility companies throughout the country and promote exchange of information. Toward this end, the subcommittee has corresponded with numerous groups, and members of the Accident Prevention Committee have filled many speaking assignments in various areas.

The Accident Prevention Committee is instrumental in suggesting and developing standards for linemen's rubber protective equipment. Because of the importance of such equipment in the daily conduct of the industry's operations, the Rubber Protective Equipment Subcommittee continuously reviews experience with commercial protective devices and standards concerning this apparatus. A questionnaire is currently being prepared by the subcommittee, under the direction of I. R. Dohr, that will investigate rubber protective equipment practices among companies represented on the Accident Prevention Committee. After data has been gathered, it will be carefully studied to determine the correlation between protective equipment practices and the accident experience of companies of the industry. It is anticipated that this project will clarify the effectiveness of certain rubber protective equipment in the prevention of electric shock and burn accidents.

An activity of the Accident Prevention Committee that has proven to be particularly successful during the past two years has been the summertime hazards program conducted by a subcommittee under the chairmanship of R. H. Coleman. In anticipation of the warm-weather months of 1951 and 1952, the subcommittee prepared a series of posters, linemen's leaflets, and letters directed to leaders of linemen's crews. This material dealt with the increased necessity for the use of rubber protective equipment during summer months, since electric company employees are involved in many more electric shock accidents during these months than at any other time of the year. This summertime hazards program was favorably accepted by the industry, and last year approximately 214,000 leaflets were placed in the hands of linemen and over 37,000 posters prepared by the subcommittee were distributed to companies within the industry. The Accident Prevention Committee feels that emphasizing the increased hazards associated with the summertime is an effective way to improve the accident rates of the industry and a similar program, being planned for the warm-weather months of 1953, was discussed at the meeting.

A safety message from the Accident Prevention Committee is carried each

Chairman W. F. BROWN, Consolidated Edison Co. of N. Y., presides at the Accident Committee meeting in Missouri.

E. L. GODSHALK, Vice President, Kansas City Power & Light Co., addresses the EEI group on "Safety Is Our Business."

month to companies of the industry in the *Monthly Safety Letter*. P. M. Gentzel has succeeded F. G. Harriman as sponsor of this project and is planning an integrated program for approaching particular causes that are frequently responsible for electric industry accidents.

A report on practices of electric companies with regard to linemen's belts and straps will result from a questionnaire that is being prepared by C. A. Fischback, Chairman of the Linemen's Belts and Straps Subcommittee. This study will reveal practices and standards that are considered by the industry as being most acceptable for specifications, usage, and inspection of this important part of the linemen's safety equipment. R. E. McCann reported on this activity in the absence of Mr. Fischback.

H. E. Hatfield and Mr. McCann represented the Accident Prevention Committee at the October 23-24 meeting of the Transmission and Distribution Committee in Dallas, Texas, At the meeting a panel discussion on the subject of "Use of Protective Equipment on Distribution Circuits" was conducted by F. W. Nimmer, sponsor of the Safety Group of the T&D Committee, and 11 accident prevention topics were considered. Prior to the meeting, Mr. Hatfield had prepared a report on each of these subjects based on the experience and practices of companies represented on the Accident Prevention Committee.

Each year the Accident Prevention Committee, through it's "Analysis of Fatalities" project, presents to the industry a review and classification of fatal accidents reported annually to the committee. S. H. Young, current sponsor of the project, recently compiled these fatality reports on the basis of accident types and contributing causes. Because this yearly summary explicitly reveals how fatal accidents in the industry are occurring, the committee decided to use this summarized data as source material for posters and other publications, and Mr. Young presented charts based on the summaries of fatal accidents during several years to indicate the trends in fatalities due to certain causes.

The round-table discussion periods, sponsored by A. F. Randolph, constitute one of the most important activities of each committee meeting, as this activity allows members and guests to exchange views and practices in regard to equipment and procedure. Over 30 round-table topics were considered at the January meeting, and during the discussion periods, members and guests reported on practices concerning the use of rubber climber guards, methods of mounting ladders on line trucks, scheduled inspections of tools and rubber goods on line trucks, driver training programs, safety precautions in switching operations, methods used to break contact between conductors and electric shock victims, and other subjects.

During the morning of the meeting's second day, C. P. Shirey presented a safety film entitled "It Could Happen to You" which was produced by the Gulf States Utilities Co., illustrating details of certain accidents and the correct procedure for performing some phases of line work. A Consolidated Edison Co. of New York, Inc., film on that company's safety fire training school was also presented.

The committee luncheon on the first day was addressed by E. L. Godshalk, Vice President of the Kansas City Power & Light Co., who spoke on the subject "Safety Is Our Business." Mr. Godshalk pointed out the necessity for "safety spirit" and added that a safety program must enlist the interest of every employee in every department of a company. During the session on the second day, C. H. Weiser of the Southwestern Bell Telephone System addressed the meeting on the subject of "Precision Sharpening, Maintenance, and Plane-Testing of Linemen's Climber Gaffs." Mr. Weiser also presented a film entitled "Climbing with Safety."

Prime Movers Committee Meeting

G. V. Williamson, *Chairman*

MEMBERS and guests of the Prime Movers Committee met in a two-day session at the Mayflower Hotel, Akron, Ohio, on February 2-3, 1953. The meeting was possibly the largest held by the committee and was attended by 98 persons from all parts of the country. Reports of the committee's various subcommittees were presented and business matters were considered. Several hours were also devoted to a round table, during which time over 30 topics were discussed.

Two interesting features of the session of the first day were reports presented by C. S. Bowden and E. C. Cawrse on highlights of new plants and additions being constructed by their companies. Mr. Bowden spoke on the new Ohio Edison station and presented slides of the control-room arrangement. Mr. Cawrse reported on the East Lake plant of The Cleveland Electric Illuminating Co. Slides were also shown illustrating the control-room layout for this station.

Following Mr. Cawrse's report on the East Lake plant, C. A. Dauber discussed details of a unique generator that will be installed as the No. 4 unit at that plant. The machine will have a 166,400/208,000-kw rating with a turbine operating at 2400 psi, 1050 F, 1050 F. The generator rotor will be built with hollow conductors through which hydrogen will flow. The stator will also have hollow conductors that will be cooled by means of a special oil with a silicone base. The machine will be built on a frame size usually used for 100,000-kw conventional hydrogen-cooled units.

C. B. Vance reported on a trouble recently experienced at the Harding Street Station due to cracks in the stop valve of a turbine. Discussion by the group indicated that others had experienced similar difficulties. Repair and inspection methods were considered.

Recently the members of the committee have submitted new steam-station cost data to W. L. Chadwick for analysis. A preliminary summary of this material has resulted in a compendium of average costs per kilowatt of guaranteed capacity for land, structures, boiler plants, turbine generator equipment, and other apparatus for stations of varying sizes and conditions. Mr. Chadwick's analysis was reported at the meeting by J. B. Moore.

J. E. Geue of the American Gas and Electric Co. presented an informative discussion on protective apparatus for power-station fire prevention. Discussion by the group emphasized the fact that approximately 80 per cent of the companies represented at

the meeting are taking steps to prevent entrained hydrogen in turbine lube-oil systems from accumulating in the oil-storage tanks. It was pointed out that several turbine manufacturers are also recommending and designing equipment to preclude hydrogen carry-over.

Considerable interest was manifest in a discussion of turbine operating periods between inspection shut downs. Although several companies represented at the meeting schedule inspection periods based on service hours, a practice receiving increasing favor is to internally inspect turbine units only when the necessity is indicated by supervisory instruments and test readings of such factors as unit efficiency, capability, and stage pressures. Some turbine manufacturers still recommend that the machines be opened after one-year's initial service, but the necessity of such inspection is being questioned by committee members. According to reports, one topping unit has been in operation for over 100,000 hr without being opened, and several condensing units have almost reached this mark.

E. F. Dissmeyer and R. L. Webb of the Electrical Equipment Committee attended the meeting for the purpose of discussing the subject of d-c testing of generator insulation. Members of the Prime Movers Committee had requested a discussion on this topic on several occasions, and Mr. Webb's presentation effectively described the method and application of d-c testing. Mr. Webb's paper was illustrated by slides.

The problem of alignment for rotating machinery has often been considered in the discussions of the committee. Recently a method of checking alignment by the use of a spirit level was developed by engineers of the Union Electric Co. of Missouri. The method promises to be of considerable use, inasmuch as it allows an alignment check to be made without breaking couplings or while a turbine generator is being rotated on turning gear. G. V. Williamson presented slides and a paper on the spirit-level method of alignment determinations.

A special feature of the Akron meeting was a discussion on the problems of higher steam pressures and temperatures and extra-large turbine-generator units. The discussion period was led by F. W. Argue and included statements by H. Weisberg and W. R. LaMotte of the Public Service Electric and Gas Co. of New Jersey. Their company has recently decided on 1100 F and 2350 psi for units to be installed at the Burlington and Kearny Stations. Mr. Dauber reported that 1200 F had been rejected for the No. 4 unit at East Lake in favor of 1050 F because of the uncertainties of turbine design for the higher temperature.

Discussion brought out the fact that increased pressures can be accommodated by current design practices but higher temperatures offer problems that as yet involve many unknowns. Preliminary calculations of several companies indicate that the use of austenitic materials required for higher temperatures would effect considerable economic savings by careful consideration of all factors in piping design. One company is of the opinion that a 300,000-kw machine will be desirable within ten years.

The Prime Movers Committee is interested in research programs that will result in increased efficiency and longer life for electric generating plants. Several proposed programs falling within the scope of the Prime Movers Committee in which the Institute has been asked to participate were considered at the meeting. Subcommittees and individuals were assigned in some cases to study the problems involved in the proposed research preparatory to the formulation of a recommendation by the committee. A subcommittee will also be appointed to follow developments in the atomic-energy field.

During the two-day meeting in Akron, committee members and guests were entertained at a dinner by the Babcock & Wilcox Boiler Co. On the afternoon of the first day a tour was conducted through B & W's Research and Development Center at Alliance, Ohio. At the luncheon on the second day, the group was guest of the Ohio Edison Co. and was addressed by W. H. Sammis, President.

Sales Conference

(*Continued from page* 82)

itself first with various aspects of "The Widening Field of Home Lighting." E. J. Hurley, Supervisor of Promotion for The Detroit Edison Co., will explain how "Home Service Works with Builders to Light Homes." Mrs. Avis R. Broadhurst, Home Service Director of West Penn Power Co., will speak on "Home Service Benefits From Builder Cooperation and Training," and Miss Edna Stephany, Home Service Director of the Pennsylvania Power & Light Co., will describe "Home Lighting Centers."

Following will be a survey on "Helping the Disabled Homemaker to Help Herself," which will include presentations entitled "A Program in Operation," by Miss Dorothea Underwood, Niagara Mohawk Power Corp., and "A Doctor's Viewpoint," by Dr. Margaret Austin, Women's and Children's Hospital, Chicago, Ill. Concluding the day will be a review of "What Every Sales Manager Would Like to Know," consisting of talks on "An Evaluation of Home Service" by Miss Elizabeth Parker, Home Service Director of the Georgia Power Co., and "An Interpretation of Home Service" by Miss Valentine Thorson, Home Service Director of the Northern States Power Co.

The Home Service Breakfast will be held Tuesday morning, with Paul F. Biklen, N. W. Ayer and Son, Inc., as guest speaker. His subject will be "Selling the Forest . . . as Well as the Trees."

KCP&L Planning Picture

(*Continued from page* 87)

own lines. We have purchased 91,000 kvar for installation in 1953, 41,000 kvar to be switched on and off on the various distribution systems and 50,000 kvar to be switched in blocks located at four or five of our larger bulk substations. The latter installation will provide against a kilowatt shortage on our system in case the 1953 generation is not installed in time for hot weather as anticipated. Ample steaming capacity is available for the 1953 summer peaks, but these 50,000 kvar will release about 25,000 kw in generation.

In a paper of this character much detail must be omitted. It is hoped that in the interest of space we have not been too brief and have portrayed a sufficient amount of detail to give a picture of the situation confronting Kansas City Power & Light.

Accident Frequency Reduction Award Approved by EEI Board of Directors

TO honor electric utility companies achieving outstanding reductions in the frequency of accidents, a new award program has been established. The award, known as the Edison Electric Institute Accident Frequency Reduction Award, was conceived by the Accident Prevention Committee and recently approved by the EEI Board of Directors. Under terms of the award, certificates bearing the signature of the Institute President will be presented annually to electric companies that show a reduction of 25 per cent or more in their accident-frequency rate over the individual company's combined frequency rate for the preceding three years.

The new award program is designed to fill a need, long felt by the Accident Prevention Committee, to recognize companies who, through careful planning and directed effort, contribute meritoriously to the improvement of the industry's frequency rate. The stimulus of such a program complements the determination of the electric industry to maintain safety on a par with the growth and technological development in the private utility field. The award is established on a continuing basis following a one-year special award plan sponsored by the committee in 1948. This one-year program, acknowledging a 25 per cent reduction in frequency and severity rates, was received with general enthusiasm and effectively encouraged safety performance in many companies.

The favorable reception by safety directors and company executives to the 1948 award has been a contributing factor in the decision of the Accident Prevention Committee to base the permanent award on frequency-rate reduction. By comparing the frequency rate for a given year with the combined rates of a preceding three-year period (in contrast to a one-year period), the possibility of recognizing companies obtaining substantial reductions over a year of unusually high accident frequency is precluded.

Any operating electric company or electric division of combination companies (companies rendering both electric and other utility service) that reports accident statistics to the Accident Prevention Committee on the form "Employee Injuries, Year 19—, Confidential Report of Electric Utilities" is eligible for this award, which will be automatically issued following a review of submitted annual data. The Employee Injury forms should be completed in accordance with the "American Standard Method of Compiling Industrial Injury Rates," ASA Z16.1—1945, and should be submitted by March 15 of the year following that for which the award will apply. Certificates for the Accident Frequency Reduction Award will be forwarded to the chief executives of qualifying companies.

Speakers' Slide Kit for Rural Service Men

SPONSORED by the Farm Utilization Committee of the EEI Farm Section, a new speakers' slide kit has been prepared for use by rural service men and others concerned with presenting the story of electrical safety and maintenance on the farm to adult and youth groups.

The kit consists of a script and 57 Kodachrome slides, which illustrate approved types of wiring devices, as well as examples of unsafe wiring. Other subjects shown include the proper methods of installing and using heat lamps, electric fences, and electric motors. Fixture repair and use of lamps in hazardous locations are also covered.

Designed to help power suppliers see that their customers receive full benefit from modern electric service, the kit should prove a first-rate aid in conveying the value of adequate wiring and in explaining the safe and proper utilization of electrical equipment and appliances. Single kits are priced at $12.00 each, two to four at $11.50 each, and five or more at $10.50 each, and may be obtained upon request to the Edison Electric Institute.

Annual Conference of Utility Fleet Operators

THE 12th Annual Conference of Public Utility Fleet Operators, sponsored by the EEI Transportation Committee and the AGA Motor Vehicle Committee, will be held at the Hotel Sherman, Chicago, Ill., next April 13-16, it has been announced by D. K. Wilson, EEI Chairman.

Of particular interest to EEI transportation people will be the opening session on Monday afternoon. At that time three papers, on the general subject "Aerial Apparatus and Chassis Selection for Use in Conjunction Therewith," will be presented by three manufacturers of truck-mounted ladders, towers, and articulated hydraulic arms. The papers, which will describe this equipment and diagram loads, spring deflections, etc., resulting from its use, will be delivered by Roy Balogh, Development Engineer, McCabe-Powers Auto Body Co.; G. H. Eckels, Chief Engineer, J. H. Holan Corp.; and O. B. Maxwell, President, Maxwell Equipment Co. There will also be open discussion, as well as prepared discussion presented from the viewpoint of the chassis manufacturer by a representative of the Engineering Department of White Motor Co.

Other noteworthy papers to be delivered during the three succeeding days of the conference will include:

"Economics of Motor Vehicle Replacement," by Prof. Joel Dean of Joel Dean Associates.

"The Principles of Fleet Management," by T. L. Preble, Supervisor of Automotive Transportation, Tide Water Associated Oil Co.

"Driver Training," by V. A. Howell, Senior Safety Director, Long Island Lighting Co.

The meeting will also include subcommittee reports; panel and round-table discussions, covering particularly the training of equipment operators; safety awards; and material on post-accident handling of drivers and automotive safety practices.

For the closing afternoon session on April 16, there will be a tour of the outdoor storage facilities for vehicles of The Peoples Gas Light & Coke Co., through the courtesy of Lester Thorsen.

Editor and Publisher Magazine Says:

Centennial Promotion Scores Points for Pacific Gas and Electric

PROMOTING a centennial proved well worth while for Pacific Gas and Electric Co., reports the leading gas and electric power utility in Northern California.

Public relations-wise, the 100th anniversary caused more interest, scored more points, and did more good than the expenditure of a billion dollars on improvements in the past seven years, it might be said.

Robert R. Gros, Advertising Director, won't quite go along with the billion-dollar comparison. He can imagine the nightmares facing every member of the organization had it not been for the extensive postwar expansion which reached the $1,000,000,000 total just this month.

But the centennial promotion did show just what the utility had built in its century of activity. It tested thoroughly the policies developed by the organization.

"P.G. and E.'s centennial was utilized as a springboard to highlight the accomplishments of the company during its first 100 years, with emphasis on the pioneering aspects which contributed to providing good service to customers at low cost. Our centennial provided an excellent vehicle to show that the company had done an outstanding job in its service area, and that there were no unserved customers.

"The centennial story also gave the company an opportunity to review its postwar expansion program and to show that private enterprise is capable and willing to do the job of serving the area, however big and costly that job might be," Mr. Gros said.

Expansion in the size of the customary newspaper advertising releases was among the moves made to give the widest possible impact to the centennial story. Copy went to the 300 weekly and daily newspapers in the company's area.

"100 Years of Experience" was the theme stressed in the advertising. Releases dealt in turn with the part the utility had played in bringing gas illumination and electric power to its area.

Dressed in old type, ads carried a lamplighter theme. The advertising releases showed, in a complete series, the utility's benefits to home, farm, and community.

For a utility, public relations is primarily customer relations, P.G. and E. maintains. For customers the advertising copy ranged from the nostalgic to the futuristic. In California, the development of power as a tool goes back to the hydraulic mining in the gold country. Today the company is a member of one of four national teams engaged in studies of atomic power under an authorization of the Atomic Energy Commission, the advertising showed.

Of benefit to suppliers of gas and electric equipment as well as to the customers, copy contrasted cooking ranges, electric lighting, heaters, irons, and refrigerators of today and yesterday.

Boxes in each ad in this series compared the cost of operation of each type of equipment today and when it was first introduced. Exact figures were provided after considerable research, it was explained. The specially prepared art ranged back the full century to a drawing showing the arrival of coal from Australia for use in California's first gas plant.

Excellent Coverage

"The centennial provided the company with the vehicle to tell its whole story of public service, and found ready acceptance in all channels of information," Mr. Gros reported.

The anniversary advertising, prepared by BBD&O, began on the last day of August and continued through December. The schedule varied in accord with the company's facilities available at different points.

The centennial program provided P.G. and E. with an excellent measuring stick of its public relations acceptance after the first 100 years. The results were 5,000 inches of newspaper clippings of news items pertaining to the event. These came from the 250 weekly and 50 daily newspapers in the company's area. They totalled 30 full size news pages, Richard Newell, of the company's advertising staff, estimated.

"They are important because they show we are part of each community we serve," James McCollum, P.G. and E. News Bureau chief, observed. Harry McMasters and Robert Letts of the news staff pointed out that the company serves the press with all genuine news about the utility, even if it is adverse.

Theirs had been a busy week. A pelican had flown against power lines and blacked out a community. A ship had broken an important line in a nearby harbor. High in the mountains a water wheel had flown into pieces.

Boosting the publicity linage were community events held throughout the area. These took the form of 100th birthday parties. Also, a travelling show roamed the state to give regional presentations at community and employee gatherings. In announcing these, P.G. and E. used a basic clip sheet release, mats, and stories plus local releases tailored to each community.

A centennial book of Charles M. Coleman, radio and TV shows, posters, and the use of a company film supplemented the utility's program which customarily calls for an advertising budget stressing newspaper advertising.

The centennial brought a bountiful public relations harvest, but that is because of 100 years of effort, Mr. Gros stressed. And for P.G. and E. the public relations problem dates back to the beginning, as recorded in the *San Francisco Daily Alta California* of 1852.

Describing the first gas light illumination of San Francisco, the early day newspaper told how, in celebration, gentlemen assembled "to partake of a collation provided for the occasion," adding:

"Mayor Garrison arose to speak, and before he had uttered three words, some wag below had got at the meter in the house, and turned off the gas, leaving the room and guests in total darkness."

Reprinted from *Editor & Publisher* for February 21, 1953.

Personals

H. R. Searing, President, Consolidated Edison Co. of New York, Inc., has been named Chief Executive Officer of the company, succeeding **Ralph H. Tapscott,** Chairman of the Board, who has relinquished the post preparatory to his retirement.

MR. SEARING

Becoming associated with the New York Edison Co. in 1917 as assistant chief electrical engineer, Mr. Tapscott was named electrical engineer in 1925 and vice president of New York Edison and United Electric Light & Power Companies in 1932. When these companies were merged into Consolidated Edison in 1936, he remained a vice president, was elected president the following year, and chairman of the board in 1949.

Mr. Searing joined New York Edison in 1909, transferring later to United Electric Light & Power, where, in 1923, he became assistant electrical engineer. In 1932 he was appointed general superintendent of distribution for the Edison and United companies and, in 1939, engineer of operation for Consolidated Edison. He was elected a vice president in 1940 and president in 1949.

Edward F. Barrett, President, Long Island Lighting Co., has been elevated to Chairman of the Board of Directors, and has been succeeded as President and Chief Executive Officer by **Errol W. Doebler,** Operating Vice President. **Edward C. Duffy,** Assistant Vice President in Charge of Electric Operations, has been named Vice President in Charge of Operations, Construction, and Engineering.

Mr. Barrett, who served as president for 15 years, began his business career in the real estate field and later served as Deputy Chamberlain of the City of New York. In 1918, he became affiliated with the National City Co. of New York and later became vice president of the National City Bank of New York. His first association with Long Island Lighting, which he joined in 1934, was as vice president and a director. In 1937 he became president of Long Island Lighting as well as of Queens Borough Gas & Electric Co. and Nassau & Suffolk Lighting Co., two former affiliates of his present company.

MR. BARRETT

Prior to his employment in 1927 as assistant business manager of Long Island Lighting, Nassau & Suffolk Lighting, and Long Beach Gas Co., Mr. Doebler's career included military service during World War I, teaching civil engineering courses at Swarthmore College, employment in varying aspects of engineering, sanitation, and utility fields, and experience as a consulting engineer and appraiser. Later he was general operating manager in charge of gas and electric operations, engineering and construction for the three companies. Mr. Doebler has been a Vice President of Long Island Lighting since 1941, and a Director of the company since 1945. He is also a Director of the Institute.

Mr. Duffy, who was graduated from the University of Notre Dame, was an employee of Consolidated Edison Co. of New York for 11 years before he joined Long Island Lighting in 1942 as a mechanical design engineer. Prior to his elevation to his present post, he held the position of superintendent of generating and substations, staff engineer, production manager, assistant operating manager, and electric operating manager.

MR. DOEBLER

William H. Wagner, Sales Manager, Wisconsin Electric Power Co., has been elected Vice President in Charge of Sales, the position vacated by the recent retirement of **Frank A. Coffin.**

Mr. Wagner graduated from Lehigh University in 1931 and was employed by Wisconsin Electric Power that same year. He became assistant sales manager in 1947 and sales manager in 1948.

Other promotions include those of **Almer Skretting,** who was advanced to the position of General Sales Manager and **James H. Dunham** who has become Assistant Sales Manager.

An electrical engineering graduate of the University of North Dakota, Mr. Skretting has been with the com-

pany since 1922. He became assistant superintendent of industrial sales in 1945, superintendent of that division in 1948, and assistant sales manager in 1950.

Mr. Dunham began his company affiliation with a subsidiary in 1929. Since 1940 he has been located at Racine, Wis., as promotional director of the company's extension system.

A. R. Watson, Vice President of Southwestern Public Service Co., has been elected Vice President and General Manager. Since 1937, the position of general manager has been filled by **J. E. Cunningham,** President and Director.

Mr. Watson has been associated with Southwestern Public Service and predecessor organizations since 1935. He became vice president of Texas-New Mexico Utilities Co. in 1939 and the next year was made president, an office he held until the company became a part of Southwestern Public Service.

Following his graduation from Rose Polytechnic Institute, Mr. Watson joined the General Electric Co. as test engineer and served in engineering and sales capacities until starting his power company career in the Gulf Coast area in 1924. He was vice president and general manager of the Arkansas Utilities Co. prior to joining Texas-New Mexico Utilities.

Walter G. Jens, Vice President in Charge of Operations, Duquesne Light Co., has retired after more than 40 years' service in the electric industry.

Mr. Jens first became associated with the industry in 1910 when, following his graduation from Armour Institute of Technology in Chicago, he joined the Standard Gas and Electric Co. Since then his activities have included surveying for transmission lines in Minnesota and Wisconsin for the Consumers Power Co., resident engineer for the construction of hydro-electric plants on the Apple River, assistant superintendent of construction of the Coon River Dam on the Mississippi River, and construction superintendent for the Cabin Creek Power Plant (West Virginia) and for other projects in the South, the Midwest, and on the West Coast.

Later, he was construction superintendent of the Byllesby Engineering and Management Corp., an affiliate of Duquesne Light Co., and was in charge of construction of the Colfax Power Station before he was named to his present position in 1949.

Francis McQuillen, Assistant to the President, West Penn Power Co., has retired after 35 years with the West Penn System.

Prior to his affiliation with the system in 1918, Mr. McQuillen held positions with New York City's Inter-Borough Rapid Transit Co., the New York Edison Co., and American Gas and Electric Co. At West Penn he held the positions of power engineer and industrial sales manager prior to his last promotion.

In 1950, he was appointed by the President of the United States as the industry and power representative on a United States Economic Mission team to the Philippine Islands. Mr. McQuillen also has served as chairman of a national Joint Committee on Railroad Electrification, a director of the Engineering Society of Western Pennsylvania, chairman of the Institute's Power and Heating Committee, and president of the Pennsylvania Electric Association and Sales Executive Club of Pittsburgh.

Frank C. Bash, Assistant Treasurer, The California Oregon Power Co., has been elected Vice President and Treasurer, assuming the duties of **Morey D. Field,** who recently retired because of ill health.

Vepco's Employee Information Program

(*Continued from page* 68)

9. Do you get enough support from the boss to do your job effectively?	( ) All of the time	41
	( ) Most of the time	39
	( ) Some of the time	14
	( ) Seldom	4
	No answer	1
10. Does your boss encourage you to discuss with him any problems that you may have?	( ) Yes	82
	( ) No	14
	No answer	4
11. How much have the relations between management and non-supervisory employees improved since the Employee Information Program was started?	( ) Considerably	37
	( ) Somewhat	41
	( ) Very little	18
	( ) None	2
	No answer	1
12. Has this program made your work more or less pleasant?	( ) More pleasant	63
	( ) Less pleasant	5
	( ) No difference	30
	No answer	2
13. Please say why you answered question 12 the way you did.	Total comments question 13—389	
14. Are you allowed to make routine decisions without first checking with your boss?	( ) No	8
	( ) Yes	90
	No answer	2
15. Do you have enough authority to carry out the responsibilities of your job?	( ) Yes	83
	( ) No	15
	No answer	2
16. If your answer to question 15 is "No," what additional authority do you need?	Total comments question 16—59	
17. How do you believe Vepco's organization might be improved?	Total comments question 17—256	
18. If you were responsible for the Employee Information Program, what would you do to improve it?	Total comments question 18—264	
19. Do you believe it worth while for the company to continue the program for non-supervisory employees?	( ) No	32
	( ) Yes	64
	No answer	3
20. Top management says it ought to be equally fair with both non-supervisory and supervisory employees. Do you think it tries to be equally fair to both?	( ) Yes	78
	( ) Favors supervisory employees	2
	( ) Favors non-supervisory employees	17
	No answer	3

A graduate of Culver Military Academy and the University of Washington, Mr. Bash first was employed by the company during the summer of 1924 when he worked with a transmission line construction crew. In 1926, he rejoined the company and since has been continuously employed there. His duties included those of auditor in charge of accounting on construction of various hydro plants, and valuation and original cost work, before he was named as the Accounting Department's chief clerk, the position he held immediately prior to assuming the post of assistant treasurer.

S. E. Ratcliffe, Assistant Treasurer, Virginia Electric and Power Co., has been named Treasurer to succeed **P. R. Williams,** who recently resigned from his Treasurer's duties but who will continue to serve Vepco as a financial adviser. Appointed as Assistant Treasurers were **Arthur L. Clark,** Director of Auditing and Procedures; **Alvis M. Clement,** Supervisor of Taxes and Statistics, and **Robert G. Schneider,** Supervisor of Customer's Accounting.

Mr. Ratcliffe has been engaged in public utility accounting work for the past 35 years, having started in 1917 with the Connecticut Power Co. at New London. Subsequently he was associated with the Puget Sound Power & Light Co., Stone & Webster Service Corp., and Engineers, former parent organization of Vepco.

Employed by Vepco in 1928 as a payroll clerk, Mr. Clark advanced through various accounting positions to that of chief accountant, a post he held for six years prior to assuming his present duties in 1951.

Mr. Clement, who is a graduate of the University of Richmond and is a certified public accountant, joined Vepco in 1939 and has held the positions of assistant tax accountant and tax accountant.

During his 31-year association with Vepco, Mr. Schneider has held various positions in the Distribution, Stores, and Accounting Departments.

Donald E. Williams, Assistant Secretary, The Cleveland Electric Illuminating Co., has been elected Secretary of the company, succeeding **Sydney L. Hall,** who has resigned to become Vice President of the Clevite Corp. **Frederick C. Prasse,** Counsel in the company's Law Department, has replaced Mr. Williams as Assistant Secretary.

Mr. Williams joined the Illuminating company in 1939 shortly after graduation from Ohio Wesleyan University and was employed as an interviewer in the Personnel Department until 1941, when he enlisted in the U. S. Navy. Returning to the company in 1945, he became manager of the newly formed Corporate Relations Department in 1947 and assistant secretary in 1948.

Arthur C. Rissberger, Assistant Manager of Employee Relations, Rochester Gas and Electric Corp., has been named Manager, assuming the duties of **Willis E. Hughes,** who died recently. Other advancements include **Alfred H. Doud,** Director of Safety, to be Assistant Director of Public Relations; **Walter McKie,** Assistant General Sales Manager, to be General Sales Manager; **C. Graydon Curtis,** District Manager of the Lake Shore District, to be Assistant General Sales Manager, and **Granger Green,** Office Manager for the Lake Shore Area, to become Manager of the Lake Shore District.

Mr. Rissberger, who joined the RG&E Engineering Department in 1913 following his graduation from the University of Michigan, has held the positions of assistant manager of employment and safety and assistant director of personnel before his promotion to his present position. He is actively engaged in committee work for the Institute and for AGA.

Experienced in safety and civilian defense, Mr. Doud has been with RG&E since 1924 except for an interruption for overseas service as a major during World War II. Since 1925, he has been an active member of the National Guard and in 1948 was given the commission of Brigadier General in command of the 105th A.A.A. Brigade of the National Guard for Rochester and Western New York. Mr. Doud is a member of several national safety committees.

Mr. McKie, a graduate of the University of Michigan, has been in every branch of sales work in RG&E since he joined the company in 1922. He holds membership on the Board of Trustees for the Salvation Army and the Board of Governors for the University of Michigan Alumni Association.

Mr. Curtis has held his present position since 1933. He is a graduate of Cornell University, and has been with the company since 1920.

Mr. Green, before assuming his present duties, held the positions of rural representative and field engineer. He joined RG&E in 1935 shortly after his graduation from the University of Syracuse.

Correction

In last month's BULLETIN, p. 52, 40 per cent was listed incorrectly as the saving gained by purchasers of Westinghouse standardized turbines. The saving is 4 per cent.

Conventions

(*Continued from page* 66)

JULY

17 EEI Industrial Relations Committee, in conjunction with Personnel Section, Wisconsin Utilities Association, Green Bay, Wis.

AUGUST

5-8 International Association Electric League's 18th Annual Meeting, Fairmont Hotel, San Francisco, Calif.

SEPTEMBER

14-18 IES National Technical Conference, Commodore Hotel, New York, N. Y.

18-19 Maryland Utilities Association Fall Conference, Cavalier Hotel, Virginia Beach, Va.

20-23 Rocky Mountain Electric Association 50th Annual Fall Convention, Broadmoor Hotel, Colorado Springs, Colo.

21-26 International Association Electrical Inspectors, Silver Jubilee Meeting, Edgewater Beach Hotel, Chicago, Ill.

27-30 Controllers Institute of America, Annual Meeting, Hotel Statler, Boston, Mass.

OCTOBER

12-13 Iowa Utilities Association Management Conference, Hotel Fort Des Moines, Des Moines, Iowa.

19-21 ASA 4th National Standardization Conference and 35th Annual Meeting, Waldorf-Astoria, New York, N. Y.

19-23 ASCE Annual Convention, Hotel Statler, New York, N. Y.

21 PIP Steering Committee, Edgewater Beach Hotel, Chicago, Ill.

22-23 PIP Workshop, Edgewater Beach Hotel, Chicago, Ill.

EDISON ELECTRIC INSTITUTE OFFICERS AND COMMITTEES

OFFICERS

B. L. ENGLAND, *President*.....Atlantic City Electric Co., Atlantic City, N. J.
WALTER H. SAMMIS, *Vice President*.....Ohio Edison Co., Akron, Ohio
H. S. BENNION, *Vice President and Managing Director*....420 Lexington Avenue, New York, N. Y.
H. S. SUTTON, *Treasurer*.....Consolidated Edison Co. of New York, Inc., New York, N. Y.
A. B. MORGAN, *Secretary and Assistant Managing Director* 420 Lexington Avenue, New York, N. Y.

BOARD OF DIRECTORS

(Terms Expiring 1953)

A. M. BEEBEE.....Rochester Gas and Electric Corp., Rochester, N. Y.
WALKER L. CISLER.....The Detroit Edison Co., Detroit, Mich.
C. P. CRANE.....Consolidated Gas Electric Light and Power Co. of Baltimore, Baltimore, Md.
E. W. DOEBLER.....Long Island Lighting Co., Mineola, N. Y.
M. F. GILL.....Kansas Gas and Electric Co., Wichita, Kan.
N. B. GUSSETT.....Iowa Power & Light Co., Des Moines, Iowa
D. S. KENNEDY.....Oklahoma Gas and Electric Co., Oklahoma City, Okla.
L. M. KLAUBER.....San Diego Gas & Electric Co., San Diego, Calif.
R. H. KNOWLTON.....The Connecticut Light & Power Co., Hartford, Conn.
E. L. LINDSETH.....The Cleveland Electric Illuminating Co., Cleveland, Ohio
H. T. PRITCHARD.....Indianapolis Power & Light Co., Indianapolis, Ind.
K. M. ROBINSON.....The Washington Water Power Co., Spokane, Wash.
L. V. SUTTON.....Carolina Power & Light Co., Raleigh, N. C.
H. C. THUERK.....New Jersey Power and Light Co., Dover, N. J.
W. O. TURNER.....Louisiana Power and Light Co., New Orleans, La.

(Terms Expiring 1954)

ERNEST R. ACKER.....Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.
HARLLEE BRANCH, JR.....Georgia Power Co., Atlanta, Ga.
ROBERT P. BRIGGS.....Consumers Power Co., Jackson, Mich.
H. J. CADWELL.....Western Massachusetts Electric Co., Greenfield, Mass.
STUART COOPER.....Delaware Power & Light Co., Wilmington, Del.
D. C. LUCE.....Public Service Electric and Gas Co., Newark, N. J.
M. S. LUTHRINGER.....Central Illinois Public Service Co., Springfield, Ill.
W. W. LYNCH.....Texas Power & Light Co., Dallas, Tex.
C. E. OAKES.....Pennsylvania Power & Light Co., Allentown, Pa.
HAROLD QUINTON.....Southern California Edison Co., Los Angeles, Calif.
T. E. ROACH.....Idaho Power Co., Boise, Ida.
H. B. SARGENT.....Arizona Public Service Co., Phoenix, Ariz.
L. M. SMITH.....Alabama Power Co., Birmingham, Ala.
McGREGOR SMITH.....Florida Power & Light Co., Miami, Fla.
D. E. WASHBURN.....Boston Edison Co., Boston, Mass.

(Terms Expiring 1955)

A. D. BARNEY.....The Hartford Electric Light Co., Hartford, Conn.
G. M. GADSBY.....Utah Power & Light Co., Salt Lake City, Utah
A. H. KEHOE.....Consolidated Edison Co. of New York, Inc., New York, N. Y.
ALLEN S. KING.....Northern States Power Co., Minneapolis, Minn.
EARLE J. MACHOLD.....Niagara Mohawk Power Corp., Syracuse, N. Y.
PAUL B. McKEE.....Pacific Power and Light Co., Portland, Ore.
S. C. McMEEKIN.....South Carolina Electric and Gas Co., Columbia, S. C.
GROVER C. NEFF.....Wisconsin Power and Light Co., Madison, Wis.
P. H. POWERS.....West Penn Power Co., Pittsburgh, Pa.
R. G. RINCLIFFE.....Philadelphia Electric Co., Philadelphia, Pa.
WALTER H. SAMMIS.....Ohio Edison Co., Akron, Ohio
C. V. SORENSON.....Indiana & Michigan Electric Co., Ft. Wayne, Ind.
N. R. SUTHERLAND.....Pacific Gas and Electric Co., San Francisco, Calif.
J. B. THOMAS.....Texas Electric Service Co., Ft. Worth, Tex.
ALLEN VAN WYCK.....Illinois Power Co., Decatur, Ill.

Executive Committee

R. G. Rincliffe, C. P. Crane, A. H. Kehoe, R. H. Knowlton, E. L. Lindseth, D. C. Luce, C. E. Oakes, P. H. Powers, L. V. Sutton.

EDISON ELECTRIC INSTITUTE OFFICERS AND COMMITTEES

(Continued)

ADVISORY COMMITTEE 1952-1953

D. C. BARNES.....Virginia Electric and Power Co., Charlottesville, Va.
E. F. BARRETT..Long Island Lighting Co., Mineola, N. Y.
W. C. BECKJORD.....The Cincinnati Gas & Electric Co., Cincinnati, Ohio
J. B. BLACK.....Pacific Gas and Electric Co., San Francisco, Calif.
GEORGE H. BLAKE....Public Service Electric and Gas Co., Newark, N. J.
B. F. BRAHENEY.....Northern States Power Co., Minneapolis, Minn.
PRENTISS BROWN..The Detroit Edison Co., Detroit, Mich.
CURTIS E. CALDER.....Electric Bond and Share Co., New York, N. Y.
THOMAS G. DIGNAN....Boston Edison Co., Boston, Mass.
EDGAR H. DIXON.....Middle South Utilities, Inc., New York, N. Y.
H. P. LIVERSIDGE.....Philadelphia Electric Co., Philadelphia, Pa.
J. E. LOISEAU.....Public Service Co. of Colorado, Denver, Colo.
J. W. MCAFEE.....Union Electric Co. of Missouri, St. Louis, Mo.
P. H. MCCANCE....Duquesne Light Co., Pittsburgh, Pa.
C. B. MCMANUS.....The Southern Co., Inc., Atlanta, Ga.
I. L. MOORE.....New England Electric System, Boston, Mass.
W. C. MULLENDORE....Southern California Edison Co., Los Angeles, Calif.
WILLIAM SCHMIDT, JR., Consolidated Gas Electric Light and Power Co. of Baltimore, Baltimore, Md.
H. R. SEARING, Consolidated Edison Co. of New York, Inc., New York, N. Y.
PHILIP SPORN...American Gas and Electric Service Corp., New York, N. Y.
E. S. THOMPSON....The West Penn Electric Co. (Inc.), New York, N. Y.
G. W. VANDERZEE.....Wisconsin Electric Power Co., Milwaukee, Wis.
J. R. WHITING....Consumers Power Co., Jackson, Mich.

CHAIRMEN OF EDISON ELECTRIC INSTITUTE COMMITTEES (1952-1953)

ACCOUNTING

Accounting Division Executive, E. L. CASSADY.....Indianapolis Power & Light Co., Indianapolis, Ind.
Application of Accounting Principles.....To be appointed.
Coordinator of Customer Activities, M. J. WALSH.....Consolidated Edison Co. of N. Y., Inc., New York, N. Y.
Customer Accounting, G. F. HIGGINS.....The Detroit Edison Co., Detroit, Mich.
Customer Collections, D. M. ARNOLD.....Pennsylvania Power Co., New Castle, Pa.
Customer Relations, C. J. BERNER.....Wisconsin Electric Power Co., Milwaukee, Wis.
Depreciation Accounting, G. T. LOGAN.....Philadelphia Electric Co., Philadelphia, Pa.
General Accounting, A. R. ST. BERNARD.....The Cleveland Electric Illuminating Co., Cleveland, Ohio
Internal Auditing, A. I. RUSSAK.....The Cincinnati Gas & Electric Co., Cincinnati, Ohio
Plant Accounting and Records, E. D. KING.....The Detroit Edison Co., Detroit, Mich.
Taxation, L. F. SCHOLLEY.....The Cleveland Electric Illuminating Co., Cleveland, Ohio

COMMERCIAL

Commercial Division General, J. R. HARTMAN.....The Cincinnati Gas & Electric Co., Cincinnati, Ohio
Commercial Sales Section, S. S. SANSBURY.....Union Electric Co. of Missouri, St. Louis, Mo.
Farm Section, E. D. SMITH.....The Dayton Power and Light Co., Dayton, Ohio
Industrial Power and Heating Section, MAXWELL COLE.....Philadelphia Electric Co., Philadelphia, Pa.
Residential Section, R. J. MILLER.....The Cleveland Electric Illuminating Co., Cleveland, Ohio
Special Service Section, J. M. STEDMAN.....Pennsylvania Power & Light Co., Allentown, Pa.

ENGINEERING

Engineering Division General, E. H. SNYDER.....Public Service Electric and Gas Co., Newark, N. J.
Electrical Equipment, A. M. DEBELLIS.....Consolidated Edison Co. of N. Y., Inc., New York, N. Y.
Hydraulic Power, HIBBERT HILL.....Northern States Power Co., Minneapolis, Minn.
Meter and Service, F. A. REDDING.....Southern California Edison Co., Alhambra, Calif.
Prime Movers, G. V. WILLIAMSON.....Union Electric Co. of Missouri, St. Louis, Mo.
Transmission and Distribution, J. A. PULSFORD.....Public Service Electric and Gas Co., Newark, N. J.

GENERAL

Accident Prevention, W. F. BROWN.....Consolidated Edison Co. of N. Y., Inc., New York, N. Y.
Area Development, J. FRANK GASKILL.....Philadelphia Electric Co., Philadelphia, Pa.
Codes and Standards, D. C. LUCE.....Public Service Electric and Gas Co., Newark, N. J.
Electric Power Survey, WALKER L. CISLER.....The Detroit Edison Co., Detroit, Mich.
Financing and Investor Relations, H. H. SCAFF.....Ebasco Services Inc., New York, N. Y.
Industrial Relations, F. E. VERDIN.....The Cleveland Electric Illuminating Co., Cleveland, Ohio
Insurance, I. M. CARPENTER.....Ebasco Services Inc., New York, N. Y.
Legal, T. JUSTIN MOORE.....Virginia Electric and Power Co., Richmond, Va.
Membership, E. S. THOMPSON.....The West Penn Electric Co. (Inc.), New York, N. Y.
Prize Awards, HARRY RESTOFSKI.....West Penn Power Co., Pittsburgh, Pa.
Purchasing and Stores, C. F. OGDEN.....The Detroit Edison Co., Detroit, Mich.
Rate Research, I. L. CRAIG.....Philadelphia Electric Co., Philadelphia, Pa.
Statistical, WALLACE GODARD.....The Cleveland Electric Illuminating Co., Cleveland, Ohio
Transportation, D. K. WILSON.....Niagara Mohawk Power Corp., Albany, N. Y.